RAILWAY AGE

MAY 7, 1949

M 780

GENEVA COLLEGE

...ON THE JOB

20 YEARS!

...and STILL GOING STRONG

The unretouched photograph illustrates a proven example of the actual durability and strengthening effect of *every* Wine CAST STEEL Hopper Frame. Engineered design from the very beginning has prevented distortion in the adjacent car parts. In twenty years of service, these hopper frames have insured lading against loss due to leakage around the hopper opening.

WINE

...the only

ONE PIECE-CAST STEEL

HOPPER FRAME

THE WINE RAILWAY APPLIANCE COMPANY, TOLEDO 9, OHIO

Chilled Car Wheels REDUCE

COSTS BECAUSE....

THERE IS AN A M C C W MEMBER PLANT IN

Amherst, N. S.
Atlanta, Ga.
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Boston, Mass.
Buffalo, N. Y.
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Denver, Colo.
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Marshall, Texas
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Portsmouth, Va.
Rochester, N. Y.
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St. Paul, Minn.
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Toledo, Ohio

• • • the 29 AMCCW foundries where they are made are so widely spread from coast to coast that wheels are delivered to many users over shorter distances. In fact, most American railroads have one or more of these plants either on their line or very close to it.

Whether it is Montreal or Houston, Boston or Tacoma, at each point in the list of foundry locations, you will find (1) a reliable source of chilled car wheels and (2) a dependable outlet for wheel scrap. Furthermore, AMCCW Membership is the mark of a company well in the forefront of every sound new development in improved wheel service.

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS

445 NORTH SACRAMENTO BOULEVARD, CHICAGO 12, ILL.

American Car & Foundry Co. • Canadian Car & Foundry Co. • Griffin Wheel Co.
Marshall Car Wheel & Foundry Co. • New York Car Wheel Co. • Pullman-Standard Car Mfg. Co.
Southern Wheel (American Brake Shoe Co.)

7197

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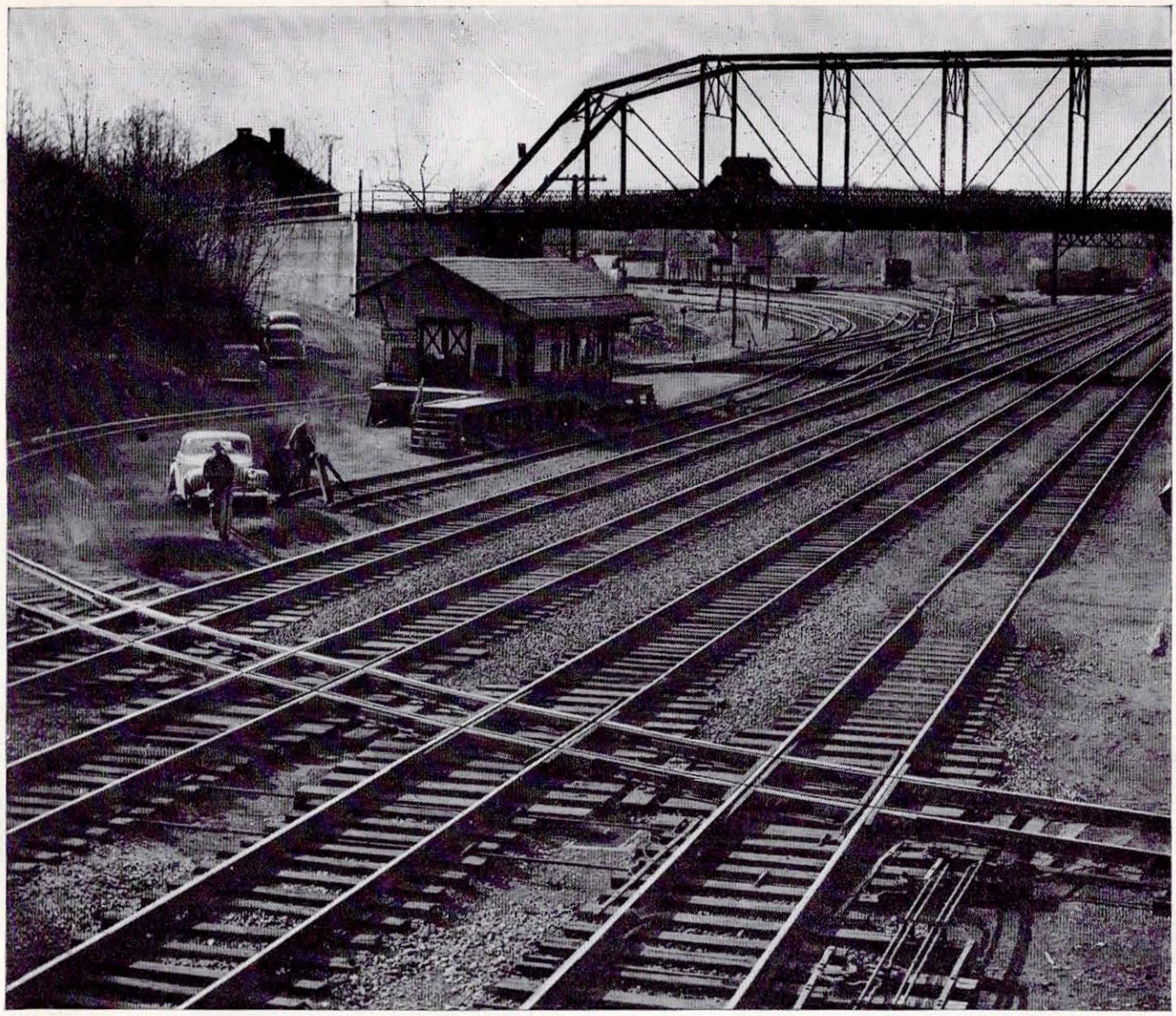

OK TODAY...because we looked ahead

These Bethlehem bolted crossings were not installed yesterday, or the day before. They were put in service a number of years ago; yet they are doing the same fine job *now* as when they were new . . . easing main-line traffic along and asking no concessions, in spite of higher speeds and heavier loads.

There are hundreds of Bethlehem heat-treated, bolted crossings throughout the country, many of which have been in heavy-duty service since the '30's. One reason for their durability is that we look to the future when building a crossing. We look ahead to greater traffic volume, heavier impacts, increased speeds—and build accordingly. Hence, during their lifetime, Bethlehem crossings have ample strength for whatever comes their way.

All component parts of a Bethlehem bolted crossing are of forged or rolled steel. After machining, cutting, and assembly, the complete fabricated unit is carefully heat-treated under close pyrometer control. Finally the unit is dismantled, sand-blasted to remove scale, and reassembled with high-tensile alloy bolts, specially treated to resist stretching. The finished crossing is unusually resistant to wear, batter, spalling, and chipping.

Ask for full details. Whenever you say the word, we'll be glad to work with you on two- or three-rail jobs to your own standards or A.R.E.A. designs.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
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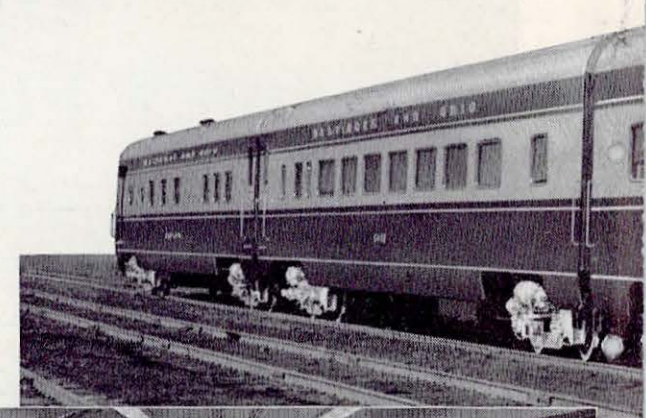
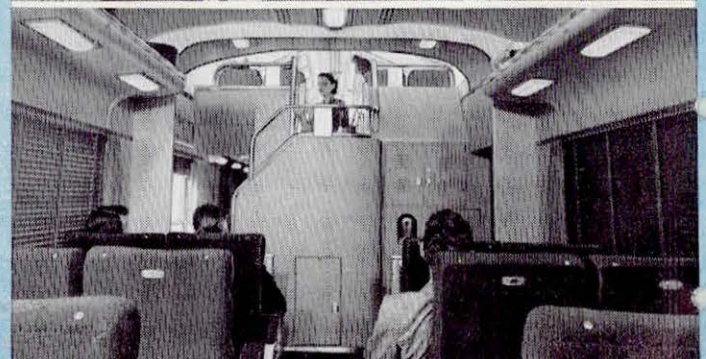
★ BETHLEHEM STEEL ★

Latest in Sky-View

FIRST DOME CARS ON EASTERN LINES



Diners on "*The New Columbian*" feature the Pullman-Standard diagonal seating arrangement. Colorful murals depict scenic points of interest along the B & O.



● The *Stratadome* is similar in principle to the glassed-in dome sections of the Pullman-Standard-built "Train of Tomorrow," which introduced the first completely new cars employing the dome construction. The entire train is equipped for radio reception, with public address facilities for train announcements and entertainment broadcasts, and with intercar telephone service. The outstanding quality of Pullman-Standard designing and fabrication is apparent in every detail of construction.

Travel

NEW "The Columbian" of the B&O

Built By PULLMAN-STANDARD

For improved visibility without distortion, flat glass is used in the dome section. Specially designed low seats are provided for maximum comfort. For general passenger interest, an instrument panel at the forward end provides a clock, speedometer, altimeter, and barometer. Seating capacity: 24.

View from main coach section of *Stratadome* car, looking toward the stairway to the dome. These cars also have two "club room" compartments, for games and social enjoyment.

● Newest on the rails are the two trains of *"The New Columbian,"* just placed in service by the Baltimore & Ohio Railroad, between Chicago and Washington, D. C. For the first time in regular service east of Chicago, the *Stratadome* cars on these trains offer passengers sky-view scenic enjoyment. Equipment includes many features of interest to travelers, and improved passenger comfort facilities. Such trains attract new traffic by emphasizing the advantages of rail travel over all competition.

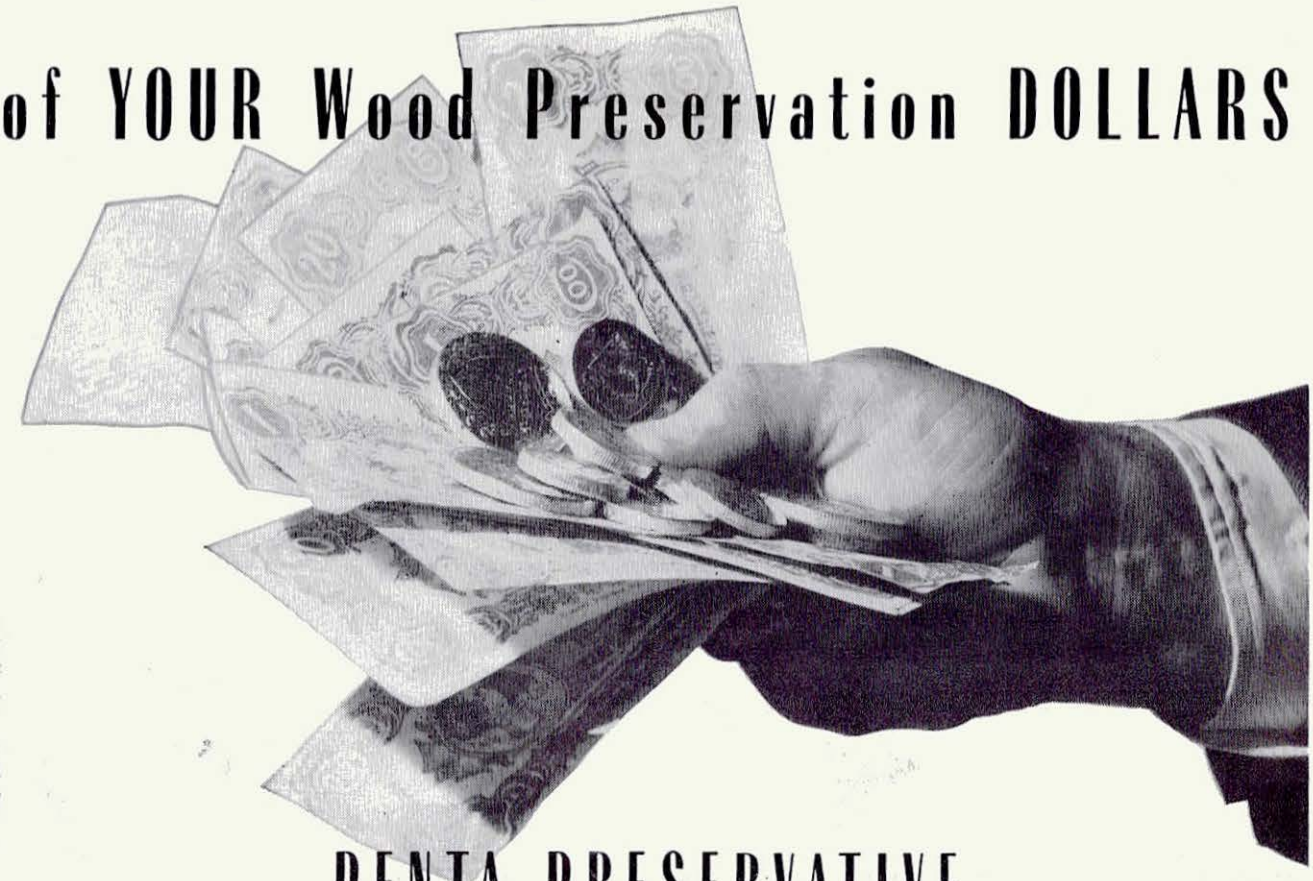
Pullman-Standard

CAR MANUFACTURING COMPANY

CHICAGO • NEW YORK • CLEVELAND • WASHINGTON, D. C. • PITTSBURGH • BIRMINGHAM
WORCESTER, MASS. • *SAN FRANCISCO SALES REPRESENTATIVE: MARK NOBLE*

Two-Way Stretch

of YOUR Wood Preservation DOLLARS



PENTA PRESERVATIVE

Economy in wood preservation is not so much a matter of saving on the preservative material, but in making sure that maximum protection is secured against untimely future loss. We urge you to specify Penta Preservative for your poles, cross arms and other timbers for two important reasons:

It's Certain Overwhelmingly conclusive test results prove termite-toxicity and decay-preventing power of pentachlorophenol. It is one preservative substance that's always the same — never varying from year to year or from place to place—because it is a chemical entity and sold as such. You stretch your dollars to maximum protection value when you specify Penta Preservative.

It's Clean Penta is light or colorless in the wood. It's practically odorless. Treated wood isn't sticky or otherwise unpleasant to handle or work with. If you think these considerations don't pay off in dollars, we suggest you talk to some of your work crews.

Costs were never more important than they are today. Give your dollar a "two-way" stretch by specifying Penta Preservative. Standard equipment and treating techniques are used. The extra benefits of Penta are yours without any trouble or extra expense. Insist on getting them.

CLEAN • IT'S CERTAIN • IT'S CLEAN • IT'S CER **CHAPMAN** IT'S CLEAN • IT'S CERTAIN • IT'S CLEAN • IT'S

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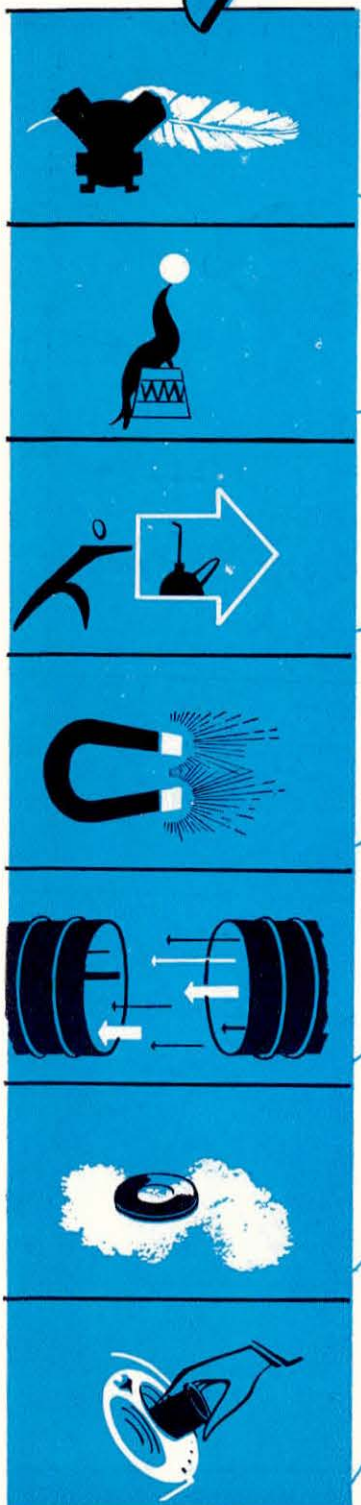
7 OUTSTANDING FEATURES

never before combined in one Refrigerating

COMPRESSOR...



REDUCED WEIGHT — Substantial savings in weight and size have been achieved through modern, high-speed designs, permitting greater ease in maintenance and lower operating costs.

PRACTICALLY VIBRATIONLESS — Multi-cylinder design, high speeds, short piston strokes result in smoother, quieter operation. Dynamically balanced crankshafts and new vibration isolators practically eliminate vibration.

POSITIVE PRESSURE LUBRICATION — Built-in oversize oil pump is gear driven directly from compressor shaft; forces oil to all moving parts. Oil circulates through shaft seal chamber, immersing and cooling seal parts. Pump automatically adjusts to direction of rotation on 10 hp and larger units.

MAGNETIC OIL CLEANING — In addition to regular oil filter and strainers, 2 powerful permanent magnets on inside of oil drain plugs pick metallic particles out of oil to safeguard bearings and other moving parts. This reduces wear; helps to insure trouble-free compressor life.

WIND TUNNEL TESTED VALVES — Valve losses have been cut in half through new aerodynamic design of gas passageways, valve parts and valve discs. This improvement in high-speed refrigerating compressor performance was achieved through extensive wind tunnel tests.

VAPOR CUSHIONED VALVES — Patented, exclusive feature that quiets valve action and extends their life by preventing hammering.

REPLACEABLE MOVING PARTS — Every part subject to wear is easily replaced, resulting in unlimited life. Cylinder sleeves, pistons, bearings, seal parts, valves and valve seats and control elements are both interchangeable and replaceable. These replacements can be made without removing compressor or motor.

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The Magician Tries to Pull Out the Rabbit —By Hungerford

Watch for other railroad cartoons by Mr. Hungerford

A cut of suitable size may be obtained at cost by anyone wishing to reproduce the above cartoon.

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1 **Creosote Oil, properly applied, makes wood last 3 to 5 times longer. Its deep penetration protects wood from dry rot, termites, fungi and other destructive organisms.**

2 **Creosote Oil is the most widely used wood preservative in the world.**

3 **Pressure treatment with Creosote Oil has been used successfully under practically all conditions for more than 100 years. Its effectiveness has been *proved* beyond the shadow of a doubt.**

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For these reasons, Creosote Oil continues to be the preferred wood preservative of America's leading railroads and utilities for the protection of their huge investments in ties, poles, and structural timber.

For these reasons, also, Barrett continues to recommend pressure treatment with Creosote Oil as the most dependable wood-preserving method. Our half-century of experience is behind this conclusion.

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

FABREEKA IS USED ON LOCOMOTIVES AND PASSENGER CARS TO ABSORB IMPACT SHOCK, VIBRATION, AND NOISE

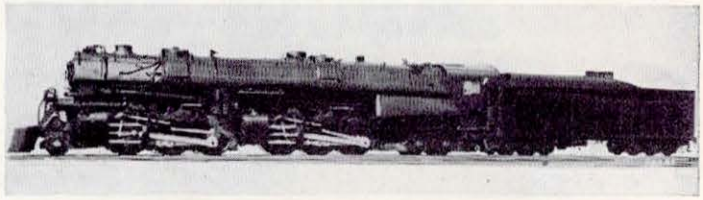
Fabreeka is used on passenger cars to increase passenger comfort by absorbing noise and vibration and to reduce mechanical wear and maintenance. It is applied in trucks, platforms and draft gear.

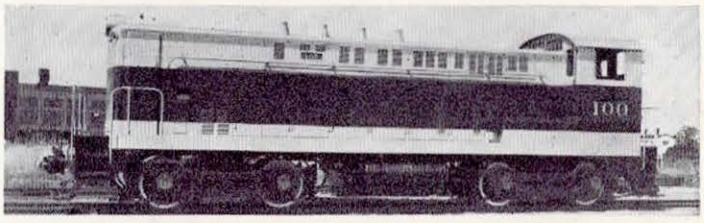
Where abrasive wear is encountered Fabreeka is vulcanized to steel wear plates to insure adequate service life. It is used not only on new equipment but also when cars are modernized.

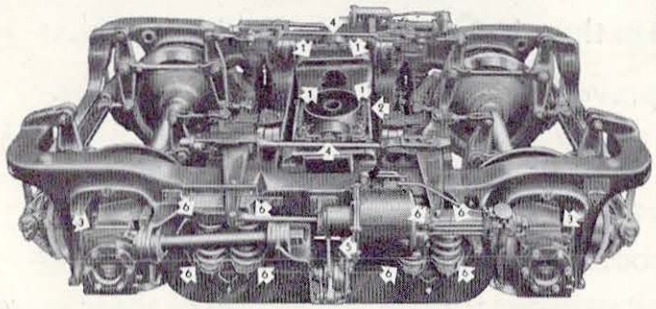
The physical properties which make Fabreeka unique are: *great strength, use in "compression", minimum permanent set, controlled resiliency, stability, high damping value,* and *long life.*

Fabreeka On Locomotives

On diesel-electric locomotives and switchers **Fabreeka is used at many points to reduce breakage and maintenance by cushioning impact blows and absorbing high frequency vibration . . . It is applied in main diesel engine mountings, air duct seal between bolster and transom, axle and stop pads, buffer stem sleeves and journal boxes.**
On steam locomotives and tenders, **Fabreeka is used at the spring end clips of semi-elliptic springs, at coil springs, for pull rod wear blocks, journal boxes and at waist bearer on articulated locomotives.**







Six Principal Fabreeka Applications For Passenger Car Trucks

(1) Pad for bolster springs, top and bottom. (2) Pad under center plate. (3) Pad on top of journal box. (4) Pad under truck side bearing. (5) Pad under spring plank. (6) Pad for equalizing coil spring, top and bottom.

(Fabreeka Applications for Car Platform and Car Body)

Center Buffer Stem Sleeve	Side Stem Spring Pad
Side Buffer Stem Sleeve	Coupler Carrier Spring Pad
Side Buffer Stem Sleeve—Rear	Coupler Carrier Pad
Center Buffer Stem Bushing	Coupler Carrier Casting Pad
Side Buffer Stem Lining	Coupler Slide Pad
Side Stem Bushing	Draft Gear Pad
Side Buffer Stem Wear Plate	Pull Rod Unit
Side Buffer Pin Washer	Pull Rod Guide
Side Buffer Stem Pin Bushing	Cylinder Lever Support
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BOSTON 10, MASSACHUSETTS

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.. William T. Faricy, President
Association of American Railroads

"Not once was the Freedom Train delayed for operational or mechanical reasons. The perfect on-time record of the Freedom Train," Mr. Faricy continues, "is a tribute to the technical know-how of the thousands of railroad men who operated and maintained the train and who arranged its itinerary."

. . . 48 states . . . 37,000 miles . . . 3,000,000 visitors . . . 325 cities . . . 15 months . . . that's the record—a perfect on-time record.

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Chairman
American Heritage Foundation

"Inspired by the Freedom Train, millions of Americans have rededicated themselves to the cause of liberty. The magnificent efforts of our railroads made this possible."

Thomas D'A. Brophy
President
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"The Freedom Train program helped immeasurably to raise the level of active citizenship throughout the nation. The railroad men of America deserve top credit for their patriotic and efficient co-operation throughout the tour."

Robert B. McColl
President
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and

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"All of us at American Locomotive and General Electric are proud that a locomotive of our manufacture was chosen to power the Freedom Train on its 37,000-mile tour into all 48 states. We wish to join with Americans everywhere in congratulating the railroads for the perfect on-time record made during this tour, and to thank them for the superb treatment they accorded the locomotive."

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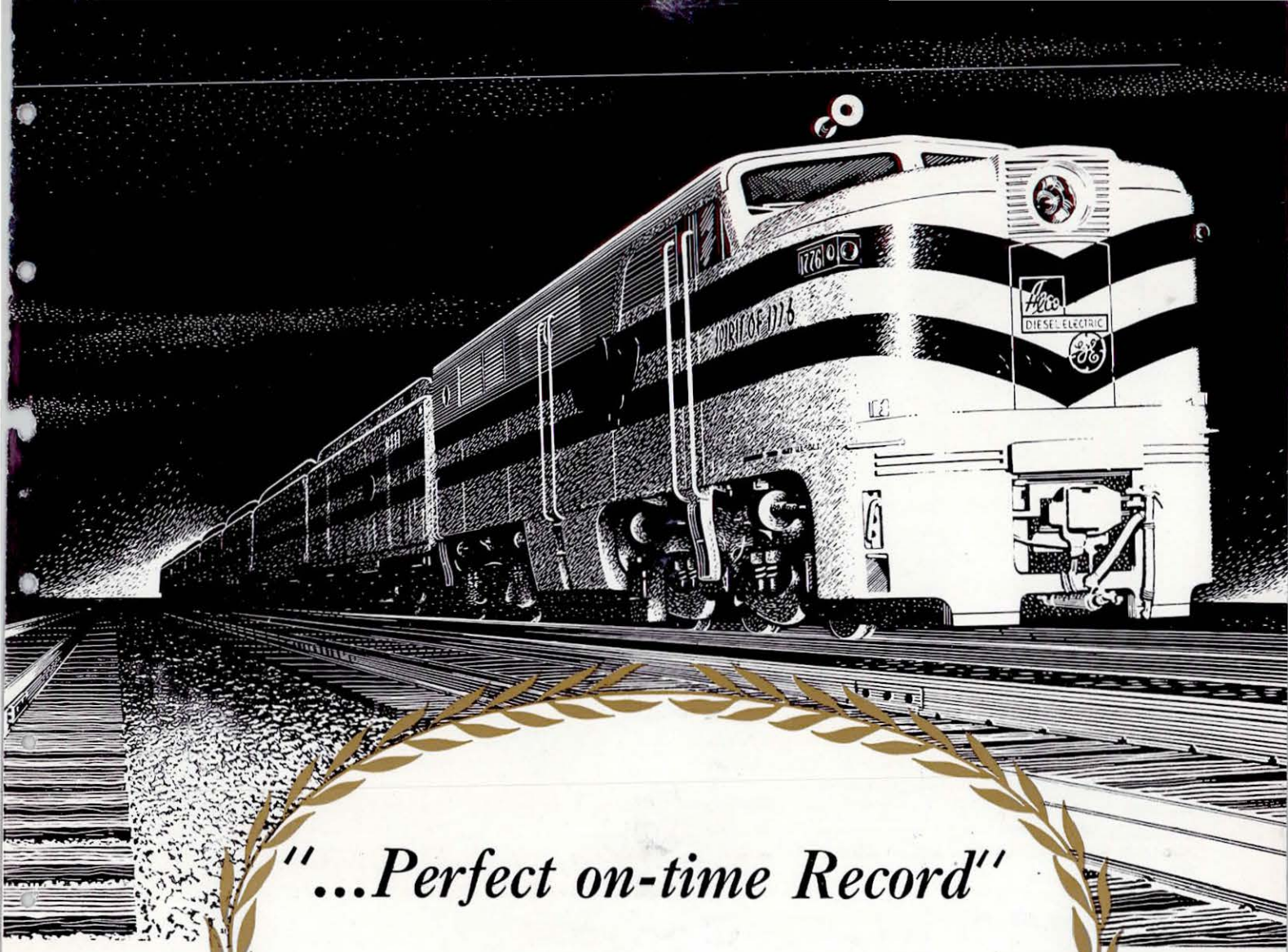

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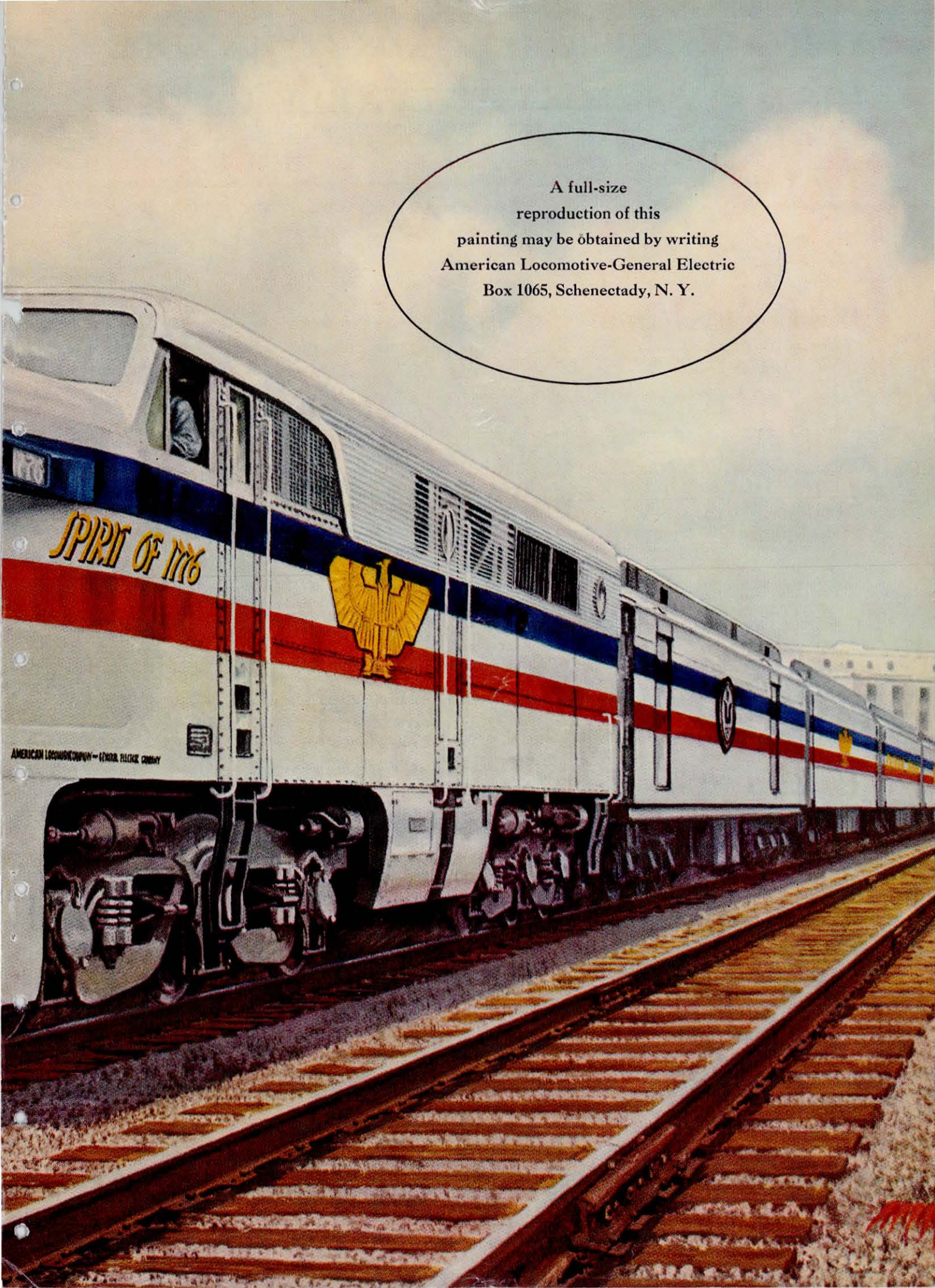
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COPPERIZED CZC

(Chromated Zinc Chloride)

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Now—timber and lumber can have even greater service life than has been obtainable with standard CZC (Chromated Zinc Chloride) treatment. New Du Pont *Copperized* CZC—backed by ten years of laboratory research and field testing—gives promise of being the best all-round salt-type wood preservative ever developed.

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THESE 6 SIGNIFICANT TESTS SHOW ITS EFFECTIVENESS

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COPPERIZED CZC
(Chromated Zinc Chloride)

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Does your rolling stock make them STOP, LOOK—and LOOK AGAIN?

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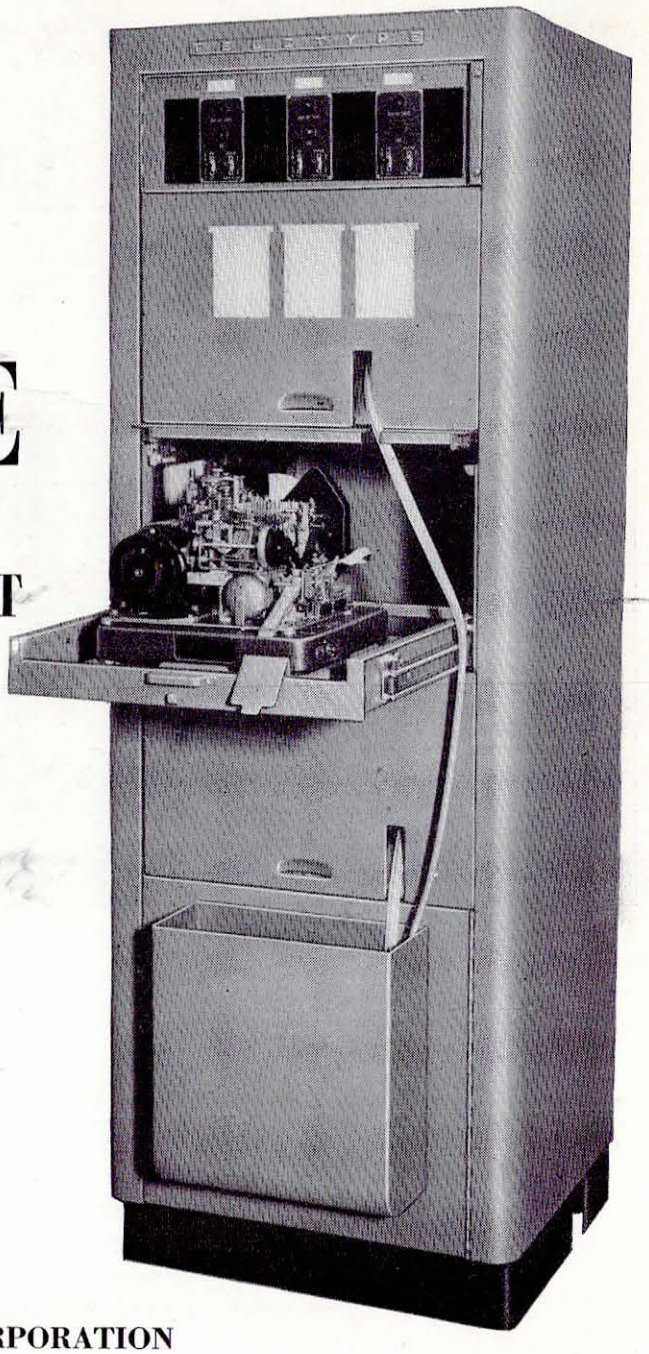
TELETYPE APPARATUS CABINET



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The Teletype Apparatus Cabinet consists of an all-metal shell enclosing a relay rack structure on which horizontal sliders are installed at various heights to accommodate the apparatus units. Cabinet is accessible from both front and rear, and disappearing panels and individually sliding shelves simplify servicing.

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Just mail the coupon below for further details.

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Chicago 14, Illinois

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Gentlemen: ***Please send me full details on the Teletype Apparatus Cabinet.***

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on VAPOR DRIED* TIES of TODAY

Oak crossties Vapor Dried and Treated with ten pounds, 30/70 Creosote-Petroleum by Taylor-Colquitt Co. September 1948.

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Vapor-Drying offers you these advantages:

Deeper penetration and better distribution of the preservative.
Reduces losses from checking and splitting.
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From tree to track in hours, instead of months.

Vapor Drying is Timber Conservation

*Process Pat.'d

TAYLOR-COLQUITT CO.
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PORUS-KROME* IN DIESEL LINERS ... Pays 6 Ways!

Liners processed with PORUS-KROME lower operating cost and increase availability of Diesel locomotives.

Photo courtesy Erie Railroad

ON THE ROAD, PORUS-KROME liners retain the high volumetric efficiency of original combustion chamber size. They use less oil and stay efficient as much as four times longer.

IN THE SHOP, that means fewer change-outs, therefore less maintenance and higher availability. (Even piston rings last up to 300 per cent longer.) When finally the limit of working tolerance is reached, PORUS-KROME liners need not be oversized.

RE-*STANDARD*-SIZE! That's the modern method. Whether PORUS-KROME liners are standard equipment or whether unprocessed liners have worn out in use, they can *all* be brought back to original dimensions with PORUS-KROME.

STORES SPACE is released. Only standard size pistons, rings and liners need ever be stocked.

LOWER INVENTORY and less handling cost just naturally result. One major road has cut out all oversize stocks. Others have that goal in sight.

IT COSTS LESS than the price of new liners to re-*Standard*-size with PORUS-KROME. Most engine builders offer this service. Or, ship worn liners direct to us. Write today for full information.

**PORUS-KROME* is a dense, hard, wear and corrosion-resistant chromium, produced by the Van der Horst Corporation of America, and which gives working surfaces an infinite number of tiny oil-retaining reservoirs for perfected lubrication.*

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U. S. PATENTS 2,048,578, 2,314,604 and 2,412,698

PORUS - KROME

Good for the Life of your Engines

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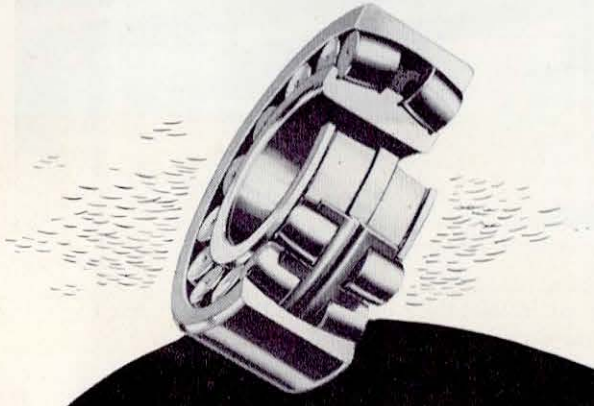
992 SKF eccentric pin bearings
2100 SKF journal bearings



Government of India Information Services

INDIAN STATE RAILWAYS ORDER SKF BEARINGS

The Indian State Railways are now engaged in an extensive program of improving their rolling stock. Locomotives are being bought from American and Canadian locomotive manufacturers. And on a great many of these engines SKF Bearings are being specified.

SKF Bearings are an outstanding contribution to railway progress, increased availability of equipment, low maintenance costs. For 28 years SKF has pioneered in the use of roller bearings on railway rolling stock. Our engineers can help you with your bearing application problems. Write: SKF Industries, Inc., Philadelphia 32, Pa. 6653

RAILROAD BEARINGS ENGINEERED BY SKF

Only One Piece

- PERMANENTLY RIGID!
- STRONGER!
- LIGHTER!

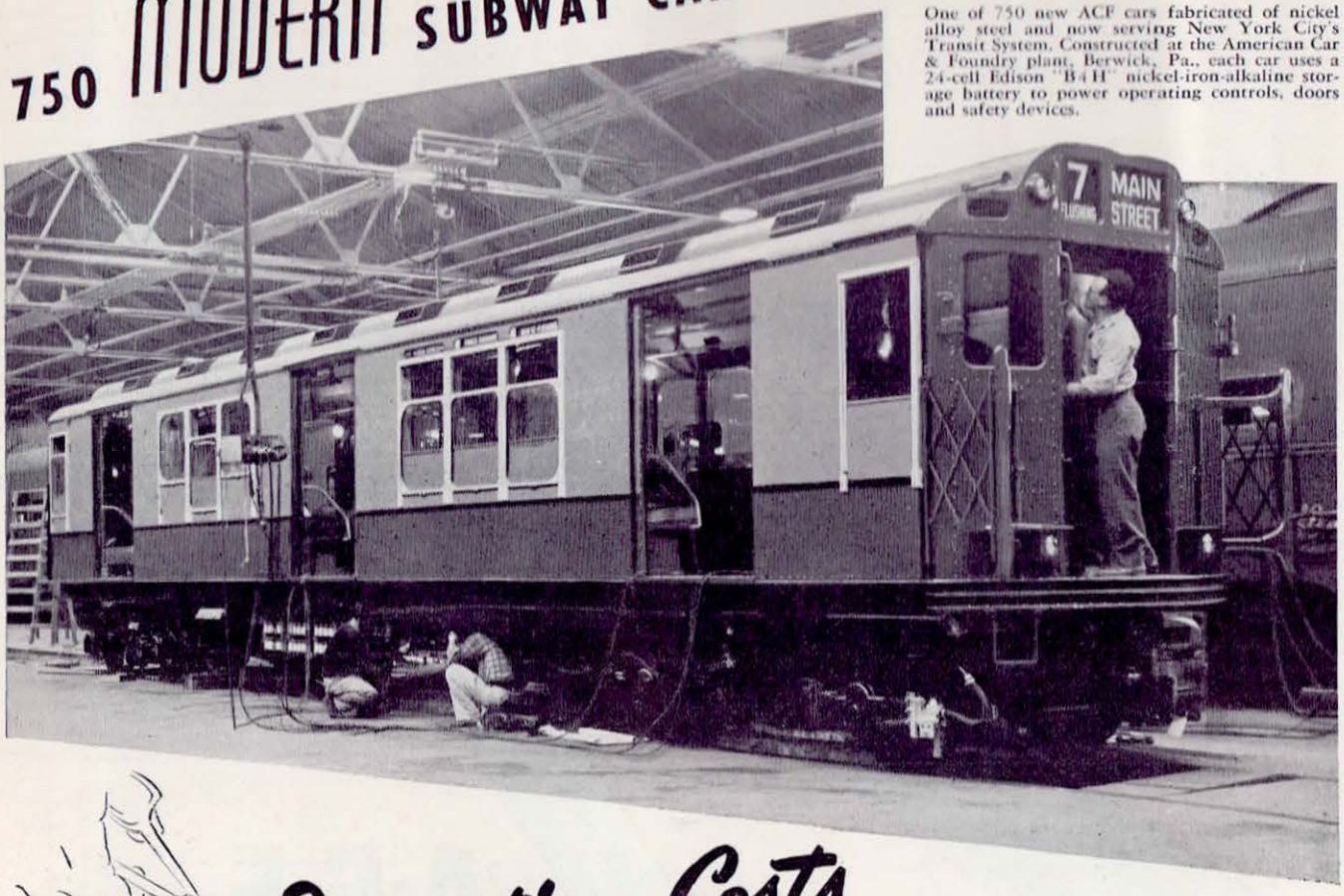
A·S·F CAST-STEEL UNIT BRAKE BEAM

The Logical Installation for all Freight Equipment

AMERICAN STEEL FOUNDRIES

MINT MARK OF ⬡ FINE CAST STEEL

750 MODERN SUBWAY CARS HELP NEW YORK CITY



One of 750 new ACF cars fabricated of nickel alloy steel and now serving New York City's Transit System. Constructed at the American Car & Foundry plant, Berwick, Pa., each car uses a 24-cell Edison "B4H" nickel-iron-alkaline storage battery to power operating controls, doors and safety devices.

Cut Operating Costs THE YEAR 'ROUND

Subway cars like the one shown under construction, permit substantial power savings . . .

In addition, they lengthen wheel and rail life because deadweight of each car is greatly reduced by welded construction and use of high strength, low alloy steel containing nickel.

The builder, American Car & Foundry Company, cut the weight to 36 tons each, and made a sturdier car even though it is lighter, with the help of "Cor-Ten," an easy-to-weld high strength nickel-copper-chromium steel produced by Carnegie-Illinois Steel Corporation.

This application is a typical example of the way high strength nickel alloy steels save money, time and labor.

High tensile steels containing nickel along with other alloying elements, are produced under various trade names by leading steel companies to provide three basic advantages:

1. High strength in the as-rolled condition, permitting important weight reductions.
2. Excellent response to such fabricating operations as forming and welding.
3. Exceptional resistance to corrosion, abrasion and impact.

Save money *day-after-day* by specifying high strength nickel alloy steels where weight saving and durability are required. Consult us on the use of these steels in your products or equipment. Write today.

Over the years, International Nickel has accumulated a fund of useful information on the properties, treatment, fabrication and performance of engineering alloy steels, stainless steels, cast irons, brasses, bronzes, nickel silver, cupro-nickel and other alloys containing nickel. This information is yours for the asking. Write for "List A" of available publications.

EMBLEM OF INCO SERVICE
TRADE MARK

THE INTERNATIONAL NICKEL COMPANY, INC. 67 WALL STREET NEW YORK 5, N. Y.

They're talking availability IN TULSA...

The operating men of the Frisco Lines in Tulsa, Oklahoma, are talking about their ten new 1,000 horsepower Fairbanks-Morse diesel locomotives. They're talking about a new availability record . . . 99.3 per cent for a full month's operation. They're saying that in their two freight yards, these ten switch engines are moving 2,750 to 3,000 cars every twenty-four hours . . . with all but one working three shifts a day. This high availability, plus low maintenance, is characteristic of all Fairbanks-Morse diesel locomotives. Fairbanks, Morse & Co., Chicago 5, Illinois.

FAIRBANKS-MORSE

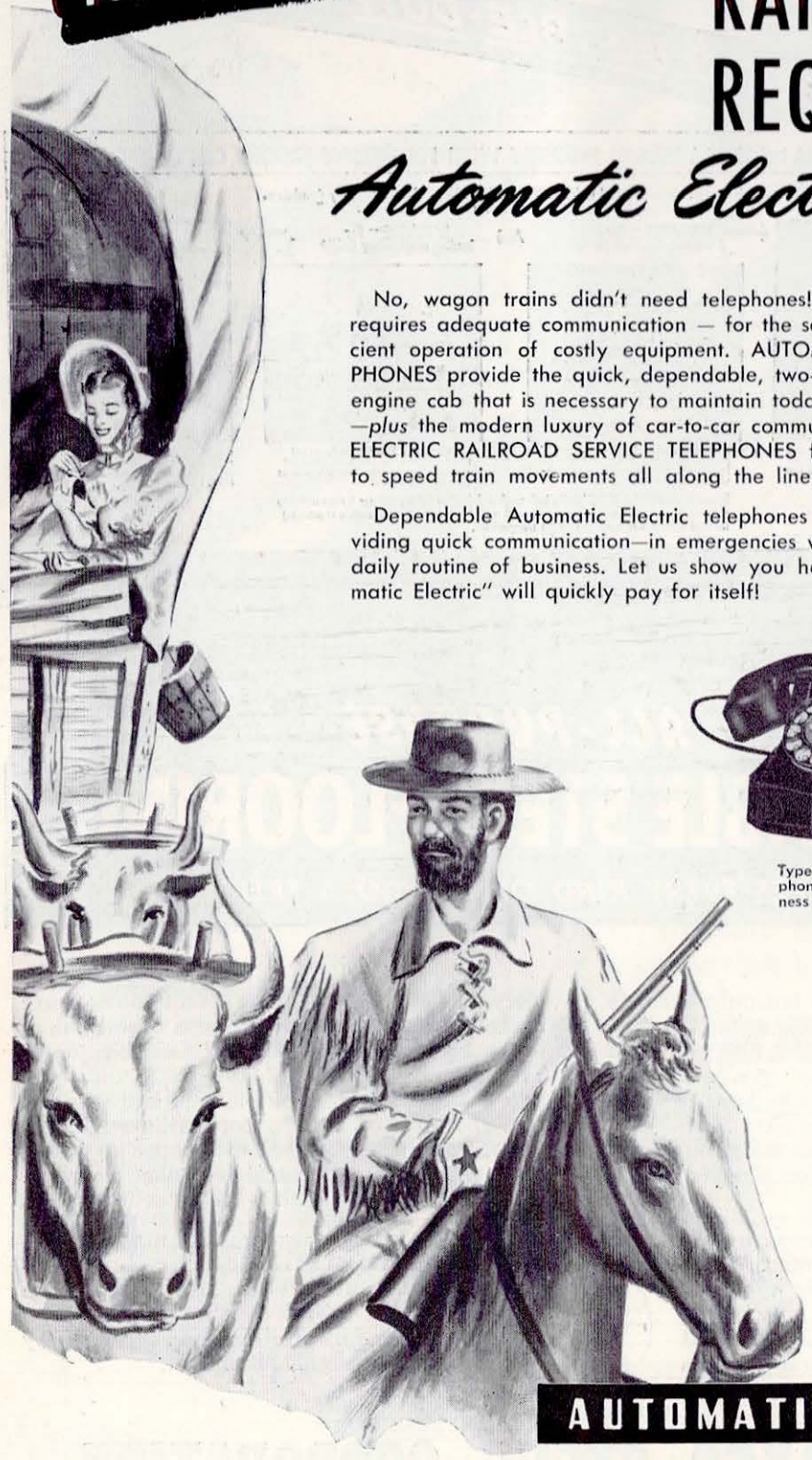
A name worth remembering

DIESEL LOCOMOTIVES • DIESEL ENGINES • STOKERS • SCALES • MOTORS • GENERATORS
PUMPS • RAILROAD MOTOR CARS and STANDPIPES • FARM EQUIPMENT • MAGNETOS

Wagon Trains Didn't Need Fast Communication - but..

MODERN RAILROADING REQUIRES

Automatic Electric Telephones



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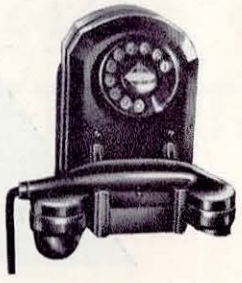
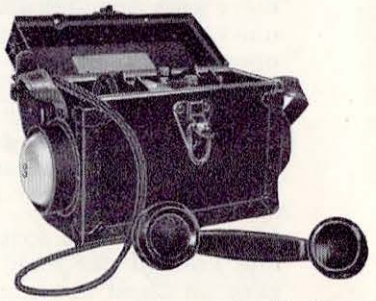


Wall Telephone for Intra-train use of crews and passengers.



The popular Type 10 Portable Telephone for yard workers and main line crews.

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Makers of Telephone, Signaling and Communication Apparatus
Electrical Engineers, Designers and Consultants

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STAINLESS STEEL DINNER KITCHEN affords a happy combination of sanitary work surfaces, ease of cleaning and low maintenance costs. This is but one of many applications for long-lasting ENDURO Stainless Steel in modern passenger car equipment. Others include wash basins and lavatories, luggage racks, door and window hardware, external sheathing, and interior and exterior trim.

Enduro-THRIFTY METAL OF 10,000 USES

SANITARY? YES, AND LONG-LASTING, TOO!

There's no question about sanitation in food preparation and serving equipment that's made of lustrous Republic ENDURO Stainless Steel. Because it is an inert metal, ENDURO has no effect upon foods or food products—and it is in no way affected by them. ENDURO's non-contaminating surfaces are easy to clean and easy to keep clean, too.

Just as important, from an operating standpoint, is the fact that strong, tough ENDURO Stainless Steel can withstand the rough usage and abuse encountered in every car application. It will not crack, chip or peel, because it is solid stainless steel all the way through.

The cost of ENDURO equipment—measured in maintenance-free years of service life—actually is surprisingly low. For complete information see your equipment manufacturer, or write us today.

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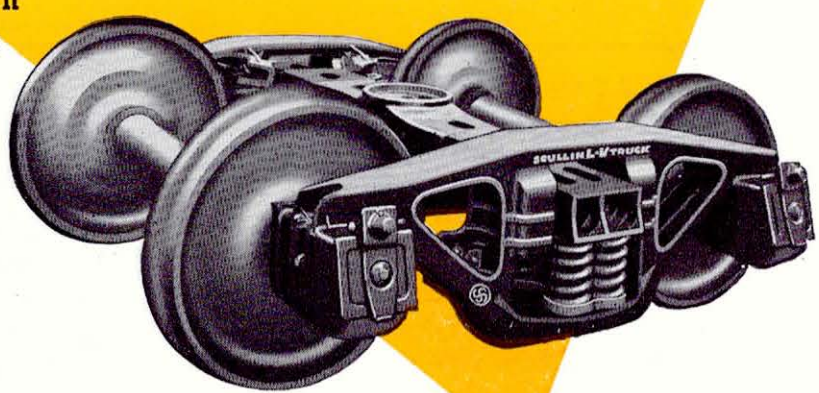
HIGH SPEED FREIGHT

safely cushioned from both
lateral and vertical shocks
by...

SCULLIN L-V TRUCKS
LATERAL VERTICAL
CUSHIONED MOTION

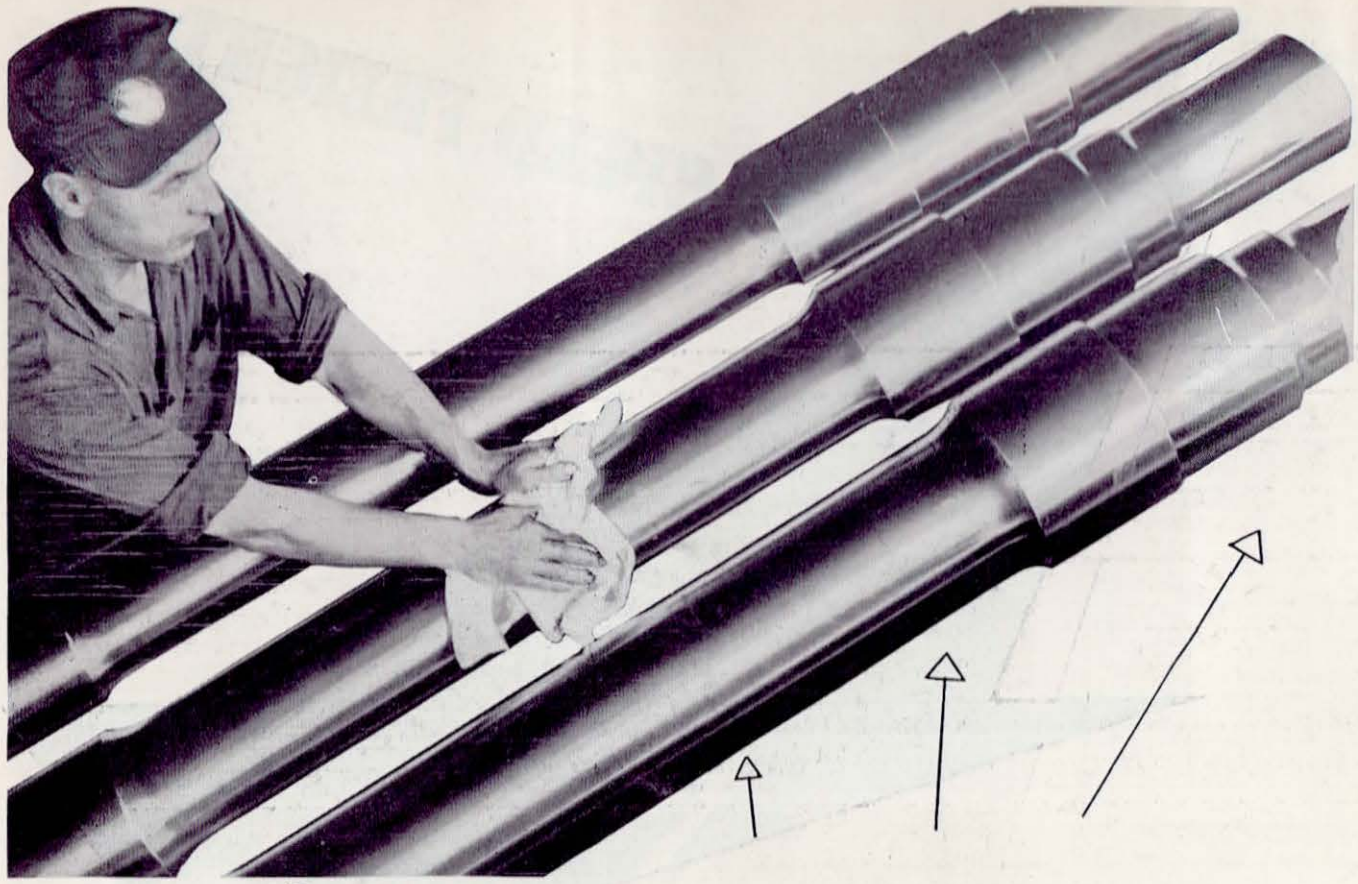


Compare first cost
and maintenance
...you'll agree on L-V!

50 YEARS' PROGRESS

SCULLIN STEEL CO.
SAINT LOUIS 10, MISSOURI

NEW YORK • CHICAGO • CLEVELAND • BALTIMORE • RICHMOND, VA. • MEXICO CITY, D. F.



HERE'S WHERE A *Fine Finish* MEANS A GOOD START

The mirror-like finish on these axles, like the finish on a piece of fine jewelry, is an indication of painstaking care and precision.

Standard's ingots are heated and forged under continuous supervision, at temperatures and by methods that will produce the most uniform structure. Constant checking throughout the production cycle safeguards quality.

NOTICE ENGINEERING AND PURCHASING DEPARTMENTS

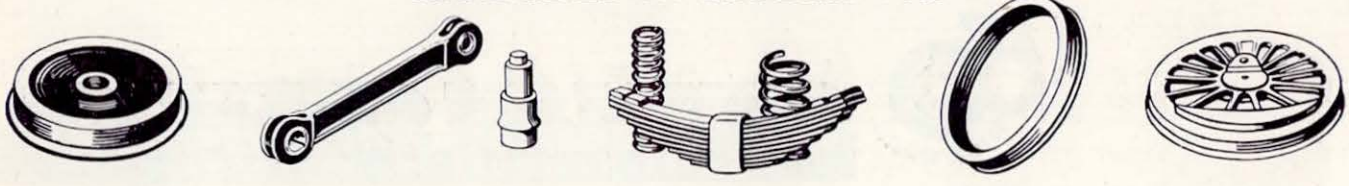
Standard Steel Works has 14 steam hammers with capacities from 3000 to 12,000 pounds, and 6 steam hydraulic forging presses with from 1000 to 2500 tons capacity. Your most severe requirements for axles, piston rods, crank pins, connecting rods and other locomotive forgings can be readily and efficiently met. May we quote you?

BALDWIN

STANDARD STEEL WORKS DIVISION

The Baldwin Locomotive Works, Standard Steel Works Division, Burnham, Pa., U.S.A. Offices: Boston, Chicago, Cleveland, Houston, New York, Philadelphia, Pittsburgh, San Francisco, Seattle, St. Louis, Washington.

STANDARDIZE ON STANDARD FOR



ROLLED WHEELS | FORGINGS | SPRINGS | TIRES | STEEL CASTINGS

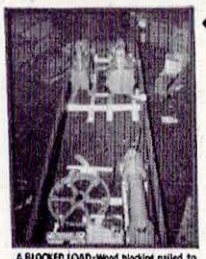
GONDOLAS—It is apparent that gondola supply will tighten up within the next few weeks and that the railroads will have considerable difficulty in meeting requirements for this type of equipment during most of 1949—AAR Car Service Division Report (Jan. 20, 1949).

TO END THE SHORTAGE BUILD DOUBLE-DUTY GONDOLAS

THE PENNSYLVANIA IMPROVES SERVICE TO INDUSTRY WITH PROGRESSIVE FREIGHT CAR CONSTRUCTION

This gondola car is equipped with **NAILABLE STEEL FLOORING**. Unlike ordinary gondolas, it handles all types of open-top freight because the floor is both:

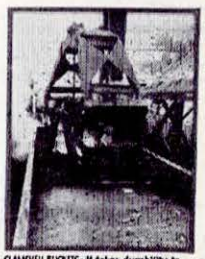
NAILABLE – for hauling finished goods **And** **DURABLE** – for loading rough heavy freight



A BLOCKED LOAD–Wood blocking nailed to floor keeps machinery in place in the car. Heretofore this has required a wood floor car.

A SKIDDED "FLOATING" LOAD–Wooden guide strips prevent sidewise movement of sheet steel bundles. Under this method, friction prevents excessive lengthwise movement of the bundles.

PIG IRON–MAGNET LOADED is rough on car floors. Until now this service has called for steel-plate floor cars which, however, cannot be used for blocked loads.



CLAMSHELL BUCKETS–It takes durability to stand up under this ten-ton giant. **NAILABLE STEEL FLOORING** does it without loss of flatness or nailability.

Because **NAILABLE STEEL FLOORING** handles both rough and finished freight, this car is more useful to shippers than either type of ordinary gondola. It represents the Pennsylvania tradition of providing the latest developments in efficient freight transportation.

At the Chicago Railroad Fair, the Pennsylvania Railroad displayed this panel in one of a series of PRR gondolas equipped with Nailable Steel Flooring.

ALL-PURPOSE NAILABLE STEEL FLOORING

TAKES EVERY KIND OF GONDOLA FREIGHT

Gondola supply tightens up not only because there aren't enough gondolas, but also because most of them can't be used for every kind of open-top freight. *Wood* floor gondolas take blocked loads but suffer severe damage when used for rough and heavy freight . . . and conventional *steel* floor gondolas take rough and heavy freight but can't take blocked loads because they're not nailable.

Many plants and loading areas use more of one kind of car than the other. When cars on hand are the wrong type for loading, wasteful, empty movement between plants and areas is required to get the right cars in the right place.

Gondolas with NAILABLE STEEL FLOORS don't make these wasteful, empty trips because they carry *both* rough freight and finished goods. They take nails easily, hold them tight, and make an excellent surface for blocked and skidded loads. Made of tough, corrosion-resistant N-A-X HIGH-TENSILE steel, they stand up under the roughest magnet and clamshell loading. They're double-duty cars—100 per cent efficient.

By minimizing empty car movement, NAILABLE STEEL FLOORS reduce railroad operating costs and increase the supply of useful cars to shippers. For new cars, for rebuilding old cars, specify NAILABLE STEEL FLOORING.

NAILABLE STEEL FLOORING
A GREAT LAKES STEEL PRODUCT

PATENTS PENDING

GREAT LAKES STEEL CORPORATION

Steel Floor Division • Penobscot Building • Detroit 26, Michigan

UNIT OF NATIONAL STEEL CORPORATION

Wagon Trains Didn't Need Fast Communication - but..

MODERN RAILROADING REQUIRES

Automatic Electric Telephones

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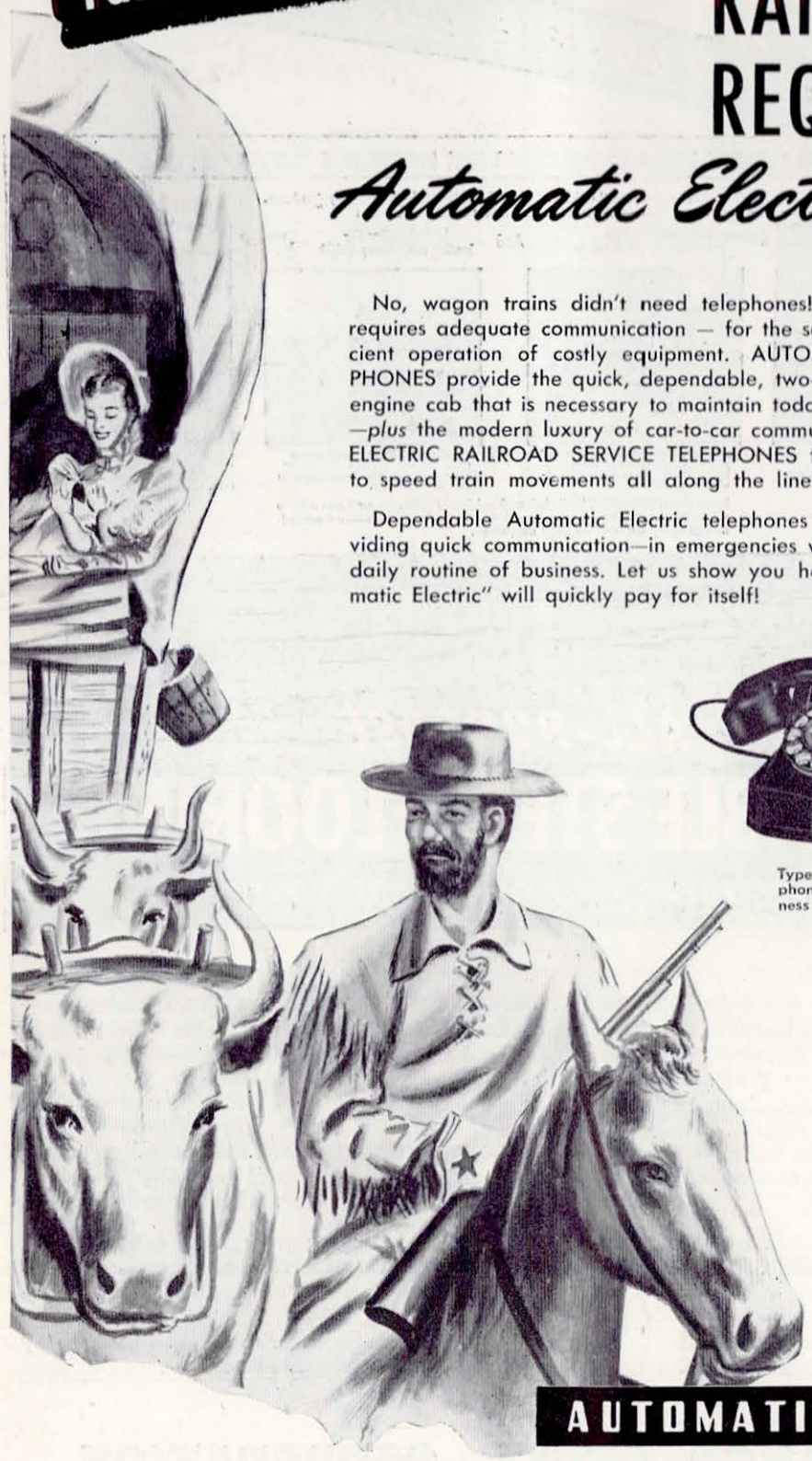

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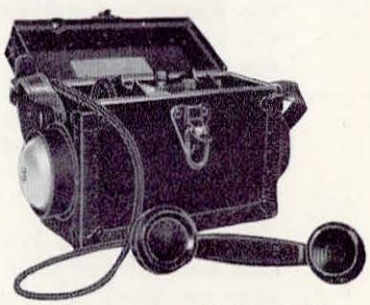

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Vol. 126, No. 19 May 7, 1949

RAILWAY AGE

With which are incorporated the Railway Review, the Railway Gazette, and the Railway-Age Gazette. Name Registered in U. S. Patent Office.

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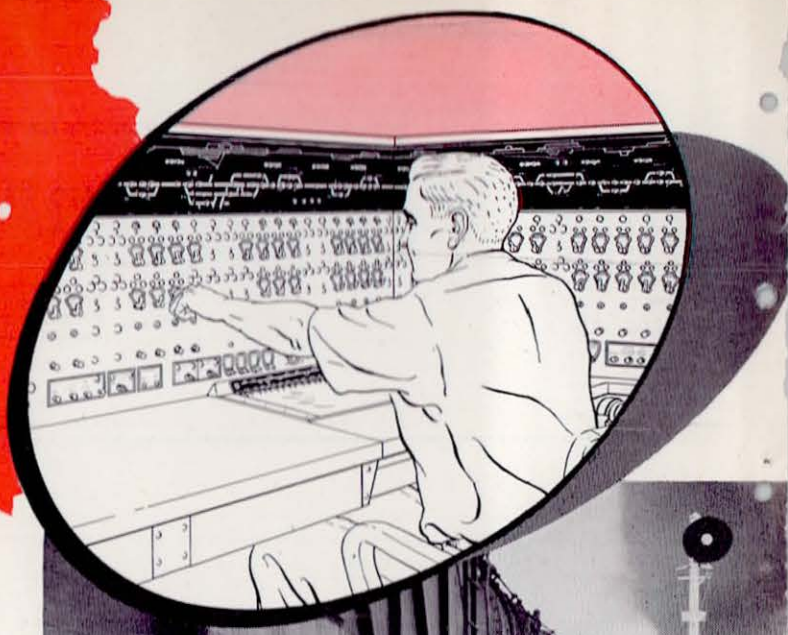
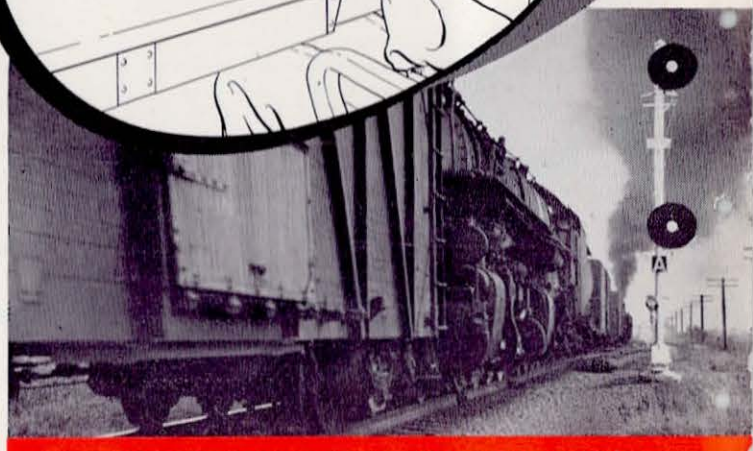
How One Road Helps Its Helpers...



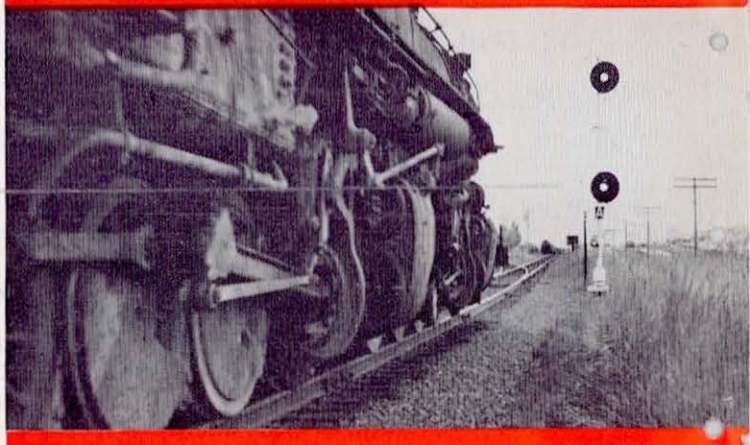
"Union" C.T.C. eliminates congestion, keeps freights moving over tortuous mountain grades on two adjacent sub-divisions of one western road. Helper locomotives are cut in and out at 13 points along the 175-mile route. With *control concentrated at division headquarters,* "Union "C.T.C. eliminates unnecessary delays . . . insures maximum service from each helper.

Due to the flexibility of "Union" C.T.C., the helper locomotives—after they are cut out—can be returned promptly by signal indication. Waits for written train orders are eliminated.

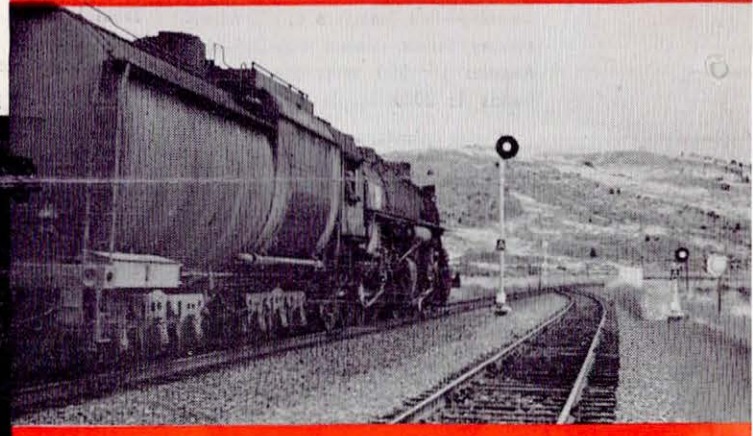
Such operating efficiency increases the availability and productivity of helper locomotives . . . minimizes the number of engines required. Proves again that *"Union" C.T.C. Saves More Than It Costs.*



Extra 3524 West, with two helpers, proceeds by signal indication "up the hill"



Meets are skillfully planned to favor Extra 3524's progress, but opposing moves are advanced as long as track is available.



One helper on Extra 3524 has been cut out . . . returns quickly with its movement authorized by signal indication.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE
NEW YORK
CHICAGO

PENNSYLVANIA
ST. LOUIS
SAN FRANCISCO

WEEK AT A GLANCE

MORE INTERVENTION: As reported in our News section, the Railway Labor Executives' Association has filed with the Interstate Commerce Commission a petition to intervene—on the side of the railroads—in the so-called reparations cases. The association, in its petition, makes some pretty potent points against the attempt by the Department of Justice (sic) to bankrupt the railroads.

AID FROM SUPPLIERS: Last week, we reported in some detail a forthright speech by Robert B. McColl, in which the Alco president called for "Twentieth Century" thinking in public policies regarding the railroads. This week, our leading editorial points out that the railroads can obtain from the railroad supply industry substantial help in their effort to win fair treatment from the public and from government—provided, however, the railroads themselves agree on, and clearly state, the objectives which they consider necessary to achieve that type of treatment.

"TWENTIETH CENTURY" THINKING: As evidenced by Mr. McColl's recent speech, and many other statements, there is strong evidence of growing sentiment for making railroad regulation less, rather than more, restrictive. Yet a recent I.C.C. decision—which the commission insists does not constitute a change in its fundamental position—has imposed additional restrictions on Rock Island operation of trucks to supplement its train service.

WOOD PRESERVERS: Beginning on page 48 we present a report of the forty-fifth annual meeting of the American Wood-Preservers' Association, held at St. Louis April 26-28. Representatives of the wood-preserving industry, meeting there with railroad men and other users of treated lumber, considered new and improved preservatives, advanced treating techniques, and more effective utilization of forest products. An editorial on page 37, praising the great contribution already made by the wood-preserving industry, also calls attention to the fact that there is still a lot to be done, if railroads are going to get maximum potential service life out of the timber products they buy.

RADIO SAVES TIME ON A.&S.: An illustrated feature article beginning on page 38 describes how the Alton & Southern uses locomotive space radio and yard loudspeakers to save time in daily classification of 2,000 cars and operation of 50 transfer trains.

TO KEEP 'EM ROLLING: Of special interest to mechanical officers is the article beginning on page 53, which is an abstract of a paper presented last month to the American Society of Lubricating Engineers by William M. Barr, research and standards consultant for the Union Pacific. In it, Dr. Barr discussed the problem of additives for a year-around car oil; the choice of roller-bearing lubricants, and the question of proper oils for the many lubrication needs of Diesel-electric locomotives.

AND SPEAKING OF RADIO: The Federal Communications Commission, in an order issued May 3 with an effective date of July 1, has taken away from the railroads one-third of the 60 radio frequencies allocated to them back in 1945. As reported in the week's News, the commission's action was based on the alleged failure of the railroads to show need for all 60 frequencies.

COMING TO A HEAD: On May 16, at Washington, D. C., the Interstate Commerce Commission will hear final argument for and against the railroads' Ex Parte 168 request for a 13 per cent increase in freight rates. In preparation for this argument, briefs—for and against the increase—were filed with the commission this week. The contentions—both pro and con—advanced in some of these briefs are summarized in an article which begins on page 45.

HOT POTATO: A few weeks ago, as duly reported in *Railway Age* of April 2, Colonel J. Monroe Johnson, director of the Office of Defense Transportation, proposed that the government, "as part of armament," acquire 550,000 freight cars, and also buy at scrap value, and store, all steam locomotives retired by the railroads. His ideas regarding government-purchased freight cars have drawn sharp criticism from at least two railroad presidents, and now Robert B. McColl, president of the American Locomotive Company, has declared that there is "not a single thing" to be gained by storing "even one steam locomotive." Mr. McColl's ideas are reported in the News section.

NEW PRESIDENT FOR R.E.A.: Alfred L. Hammell, until this week executive vice-president of the Railway Express Agency, is now president of that nation-wide organization. In his new capacity, he succeeds L. O. Head, who has retired after more than 50 years in the express business, including nearly 17 as the chief executive of R.E.A. The careers of both men are reviewed on page 57.

THE RAILROAD PATTERN: Edward L. Ullman, assistant professor of regional planning at Harvard University, has recently undertaken a detailed analysis of the railroad traffic pattern of the United States and Canada. In it, he considered such related topics as the physical characteristics of existing railroad lines, which he classified according to number of tracks and type of signaling; traffic characteristics and traffic producing areas; and the relation of railroads to topography. An abstract of Professor Ullman's interesting study, and one of the many maps which he prepared in connection with it, starts on page 42.

GM Diesels on the Great Steel Fleet

A fleet of twenty-two 4000 H.P. General Motors Diesel locomotives, used in the hauling of the New York Central's "Great Steel Fleet" of trains between Harmon or Boston and Chicago, St. Louis and Cincinnati, has averaged 27,895 miles a month per locomotive since the first went into service in March 1945.

The list of trains includes such famous names as the 20th Century Limited, the Empire State Express, the Lake Shore Limited, the Commodore Vanderbilt, the North Shore Limited, the Wolverine, the Pacemaker, the Southwestern Limited and the Ohio State Limited.

Four 2000 H.P. General Motors Diesel units went into service in March 1945, eight more in October 1945, twenty more in April 1947 and twelve more in February 1948. Total mileage made by the first four units through September 1948 was 4,692,986.

The average of 27,895 miles a month for all twenty-two locomotives (44 units) was accompanied by an average availability of 86.93%, *based on the number of hours available to total potential hours.* This enabled the locomotives to meet their assignments an average of better than 95% of the time.

Records like this make it easy to understand why more and more of America's railroads are using more and more General Motors Diesel locomotives to power their finest trains.

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The Supply Industry's Role In Promoting the Railroads' Cause

The National City Bank of New York, in the April issue of its economic bulletin, has published its annual compilation of net corporate income in ratio to book net assets for a wide range of industries—and the Class I railroads, with a rate of return of 5.4 per cent on $12.7 billion of such assets—are well down toward the bottom of the list in relative profitability in 1948. At that, however, the railroads' profit ratio was a considerable improvement over the microscopic 3.8 per cent earned on net assets in 1947. The railway equipment companies' net income, computed in the same way as that of the railroads, was 10.2 per cent of their net assets in 1948, as compared to 10.3 per cent in 1947. While such earnings seem generous when compared to those of the railroads, they are quite modest relative to the profits of the manufacturing industry as a whole, which earned 18.9 per cent on its net assets in 1948.

There is no reason whatever, except inexcusably adverse political and regulatory treatment, why the earnings of such a large and indispensably important industry as the railroads should yield such a pitiful return. The railroads need friends wherever they can find them, who will dedicate themselves to improving the political climate which keeps this industry in the doghouse—and only one step away from the poorhouse. Specifically, they need such active friends, especially, among manufacturers of railway equipment and supplies—because *the railroads' political handicaps are largely of business origin;* and railway suppliers have the entree to organizations of business men which the railroads do not have. So far, railway suppliers have been much less outspoken in advancing the interests of their customers than, for instance, the manufacturers of motor trucks and airplanes have been in promoting the interests of their customers.

Support Requires Appreciation

For the foregoing reasons, the forthright speech by the president of the American Locomotive Company, reported in our last week's issue, in which he advocated a modern, "Twentieth Century" policy for and toward the railroads, was an event of great potential significance. Whether this potential will be fully realized, of course, hinges on what now happens. Will the reception accorded to what Mr. McColl said be such as to encourage him and other leaders in the equipment industry to develop this theme further, and in more specific detail? Railroad men can undoubtedly get all the support they want from the supply side of the business if they will make it clear that such efforts are appreciated, as they surely ought to be.

In the early days of the Railway Business Association, some time around 1910, the principal speaker at the annual dinner was Martin A. Knapp, then chairman of the Interstate Commerce Commission.

Chairman Knapp, in beginning his speech, addressed his audience as "The Society for the Prevention of Cruelty to Railroads." If Mr. Knapp was correctly informed of the purpose he attributed to the R.B.A., then it can scarcely be said that the organization has been entirely successful in the attainment of its objective. At any rate, no one would contend that the railroads have suffered less cruelty since 1910 than had been inflicted upon them prior to that year. In 1910 railroad equities sold at an average price 37 per cent higher than industrials on the Dow-Jones average. In 1949, railroad equities are selling at 73 per cent less than the industrials.

It is not the purpose of these notes to engage in negative criticism by questioning the effectiveness of the Railway Business Association in furthering the cause of the railroads, but rather to serve the positive function of directing attention to the propriety and *urgency* of all legitimate effort, such as that which Mr. McColl has initiated, on the part of suppliers to the railroads—doing everything they can, both individually and collectively through the R.B.A. or otherwise, to arouse what Mr. McColl so happily phrases as "Twentieth Century" thought and action about the railroad industry.

Railroad men who are inclined to be critical of the failure of their suppliers to be as active on behalf of the railroads' interests—for example, as truck manufacturers have been in behalf of truck operators—should bear in mind that truck manufacturers have much more latitude in this respect than the railways' suppliers have. Specifically, it may well be doubted whether railroad people would relish strong pronouncements by the railroad supply industry on questions of transportation policy, before the railroads had first set forth their own views on such questions. In the field of highway transportation, quite unlike the railroads, the suppliers are the "big fellows" and the customers are "little fellows" who have grown used to having their thinking and their propaganda "line" prescribed for them by the manufacturers.

Specific Objectives

Can it be doubted that the suppliers of the railways who would like to do battle for the industry in the court of public opinion are seriously handicapped by the failure of the railroads, thus far, to agree upon more specific objectives than they have? What do the railroads consider, for example, to be a reasonable maximum weight for trucks? What basis of levies do they consider economically sound for commercial use of the highways? Do they acquiesce in favor of "federal aid" to highways, regardless of amount? Do they believe that the depreciation rate on railway equipment should be increased? If it is impossible for the railroads to achieve unanimity of opinion on such questions, then agreement and strong affirmation by a substantial number of them on any one or all of these and kindred questions would serve the same purpose—namely to release a great deal of potential missionary effort in behalf of the railroads, which is now largely immobilized on the part of those who believe it would be impolitic to speak out of turn.

This suggestion does not, of course, mean that the suppliers can and should maintain silence until the railroads first break the ice for them. Mr. McColl has shown that leaving all the initiative to the railroads is not necessary. Without attempting to dictate in any way, he has done the railroads the service of demonstrating the existence of a powerful and intelligent force ready to go into educational action in their behalf throughout the general business community—an endeavor in which lies the best hope of enabling this industry to get back onto the ladder of success and prosperity where it belongs. The job is not just one of interpreting the railroads to other business, either, but also involves that of interpreting other business to the railroads. The equipment industry is placed in much the same strategic interpretive role between the railroads and general business as the Dominion of Canada occupies as between the United States and the British Empire. The sooner this powerful instrument of communication is brought into full and purposive action, the better it is going to be for everybody—the country, the railroads, and, by no means least, the equipment industry itself.

A TARGET TO AIM AT

Steam locomotives on the Norfolk & Western have established some operating results that should serve as a challenge to everyone concerned with the operation of motive power, whether it be steam, Diesel or electric. President Smith of the N. & W. pointed out in a recent address that the N. & W.'s Class A, 2-6-6-4 locomotives had an average performance, based on gross ton-miles per train-hour, of more than twice the average for road Diesels in freight service and also averaged more miles of service per locomotive per day. This performance was attained in a territory including three mountain ranges, with heavy grades and sharp curves.

The average 1948 performance of Diesels in road freight service on Class I railroads was approximately 65,000 gross ton-miles per train-hour; and a steam power performance of more than twice that figure is noteworthy when it is considered that the 1948 Class I average of all steam power was only slightly over 35,000 g. t.-m. per train-hour. The performance of the N. & W. Class A's not only doubled the Class I average for road freight Diesels but established a record more than *four times* that of the Class I average for all steam power.

Such figures, of course, are not in any sense indicative that such a showing is only obtainable by steam power everywhere. It might, for instance, be argued that the N. & W. Class A's are in service peculiarly adapted to making such performance records, and it is also possible that there are fleets of Diesels on some roads that, over a like period, have established records comparable with the Class A's. Despite such reservations, the fact still remains that the Class A's, and their passenger companions, the Class J's, have done a job on the N. & W. so eminently superior to that done by the older steam power on other railroads that once again the question arises whether or not steam power was "abandoned on the doorstep" without the chance that it ought to have had to show what it could do.

Moreover, from the still more important standpoint of the economics involved, the N. & W. has gone all the way and set up modern repair and servicing facilities without which it is doubtful whether even modern power like the N. & W. Class A's and J's could show maintenance costs of 25 and 20 cents, respectively, for power that is now eight to fourteen years old. If road performance and low operating cost are what it takes to run trains profitably, then the modern steam power of the N. & W. has without question set the pace for the rest of the industry.

A JOB ONLY HALF DONE

The annual convention of the American Wood-Preservers' Association, reported in this issue, is a reminder of the great contribution the wood-preserving industry has made to the country in conserving the nation's timber supply, and to the railroads in holding down timber renewal costs. But statements made at the convention should serve as an equally striking reminder to the wood-preserving industry that a lot remains to be done still, if the railroads are going to get, out of the timber products they buy, the maximum service life that is potentially in them.

What the railroads want is wood—crossties, switch ties, bridge and trestle ties, and construction timbers—that will retain its sound physical characteristics during seasoning, through treatment, and in service. In some cases the need is for more than that—a product that will have superior qualities of density, hardness or strength to resist abnormal abuse in service.

Addressing the convention, J. B. Akers, chief engineer of the Southern, decried particularly the loss of life of timber being occasioned by splitting, checking and crushing in service—mechanical failures which, he pointed out, are to so large a degree offsetting the value of preservative treatment. Expanding upon Mr. Akers' remarks, E. S. Birkenwald, engineer of bridges of the Western lines of the Southern, cited a number of specific opportunities for the wood-preserving industry to improve its railway products. Among these, he suggested the possibility of a field treatment to prevent fungus attack of freshly cut timber before it can be given full preservative treatment; of reducing splitting and checking during seasoning, by chemical or mechanical means; of hardening surfaces subject to abrasion and crushing—principally the tie plate areas of crossties, switch ties and bridge and trestle ties; of furnishing an improved timber for trestle caps, resistant to crushing on top and bottom, as well as to high bending stresses; and of increasing the bearing capacity of the bottoms of stringers.

It is a well-known and lamentable fact that millions of board feet of otherwise chemically preserved timber products used by the railroads are being destroyed annually by processes other than decay; and little is being done about it.

These problems have not, of course, been overlooked entirely. Some efforts have been made, including the development of Vapor Drying, to solve at least some of them—and with some success. Also there is the specific crosstie research being conducted jointly by the Association of American Railroads, and the National Lumber Manufacturers Association. But with so many problems still unsolved and costing the railroads millions of dollars annually in lost service life of timber and in wasted labor in its replacement, efforts at solution should be much more extensive.

What is needed, as was pointed out by both Mr. Akers and Mr. Birkenwald, is still closer cooperation between the lumber industry, the wood preservers, wood technicians, specification writers, and the railroads, looking to a joint, comprehensive research and development program. Is not the American Wood-Preservers' Association, which has already done so much toward wood conservation, eminently fitted to assume the lead in any such undertaking?

The curtailment of trading areas which would result from the forced adoption of universal f.o.b. mill pricing would produce drastic reductions in rail carriers' revenue—it might well impair the financial stability of a substantial portion of the railroad industry. The carriers would be forced to drastically curtail their employment and purchases of material and supplies. This alone would produce a severe impact upon the nation's economy. Plans for further improvements in service and efficiency, requiring as they do huge capital expenditures, would have to be abandoned. The result would be a deterioration of the carriers' physical plant and rail service would become inadequate for the nation's peacetime commerce. The railroads would become wholly unprepared to cope with the country's needs in time of future conflict. Such would be the inevitable result on one important segment of our economy—the railroad system—of the artificial restraints devised by the theoretical planners of our bureaucracy.—*From a recent address by Fred Carpi, vice-president, traffic, Pennsylvania.*

COMMUNICATIONS SYSTEMS

Space radio on locomotives and loud-speakers in yards save time on Alton & Southern, which classifies 2,000 cars and operates 50 transfer trains daily

The Alton & Southern, an outer belt switching line in the St. Louis-East St. Louis switching district, has successfully developed a combination of communication systems consisting of a two-way talk-back speaker system, used in its East St. Louis Davis yard, and a two-way space radio installation on 15 Diesel-electric locomotives, used in the yard as well as on transfer runs to connecting lines at points up to 13 air miles away. The capacity of the yard, in cars classified, has thereby been increased 20 per cent.

A two-way talk-back speaker communication system was installed originally in Davis yard in 1941, which definitely qualifies the Alton & Southern as the pioneer in the development of a talk-back speaker system in a classification yard. The installation recently has been expanded in a complete replacement project which included the construction of a new 62-ft. communication tower, new keyboard control equipment and modern loud-speakers. The two-way space radio is also a recent communications improvement, having been installed in the latter part of 1948.

Davis yard is in East St. Louis, Ill., at the easterly end of the southeasterly railroad approach of the Douglas MacArthur bridge, which spans the Mississippi river. There are, in fact, four classification yards; one for classifying northbound cars, one for classifying southbound cars, and two others as stand-bys for peak business. The yards are laid out for flat switching—the parallel track being connected at each end to ladder tracks used as switching leads. Switching can be performed at both ends of all yards simultaneously. The northbound and southbound yards are laid end to end in a northwest-southeast line. The yards as a whole have a total capacity of 2,100 cars.

Layout of Railroad

The A. & S. extends northward and southward from East St. Louis. The southern part of the line extends 2.5 air miles from Davis yard to Fox terminal, where there is a wharf on the east bank of the Mississippi river. Northward, the line extends 17 mi. around the outskirts of East St. Louis, Granite City

Talk-back speakers are enclosed in hoods mounted on pipe masts located between tracks along the switching lead—This view also shows the new 62-ft. communications tower

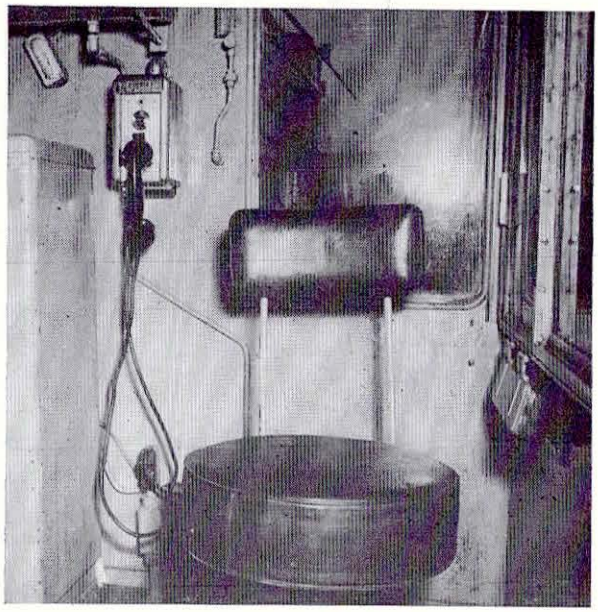
EXPEDITE BELT LINE OPERATION

and Madison, to Mitchell, where it terminates. The main-line distance from the road's southern terminus to its northern terminus is 21 mi. The A. & S. also has trackage rights to the Dupo, Ill., yard of the Missouri Pacific, and connects with the Missouri Pacific, St. Louis-San Francisco, and Manufacturers Railroad in St. Louis via the MacArthur Bridge Railway.

In addition to performing switching service for more than twenty important industries on its own rails, the A. & S. interchanges cars with 18 railroads at numerous points. Four times every 24 hr. the road pulls all cars from connections, classifies them in its centrally located Davis yard, and then makes four deliveries to each connecting road. All deliveries are on definite schedules, which results in the arrival of 50 trains at Davis yard, and the same number outbound, every 24 hr. The number of cars in each train varies with the volume of traffic, but averages 40 cars. About 2,100 cars are classified daily. The classification, industrial and transfer work are all performed by 29 assignments, each consisting of a crew of five men. As trains arrive at the yard they are rapidly classified to make way for the arrival of the next train and to enable departing trains to leave the yard on schedule.

Talk-Back System

The purpose of the talk-back system is to provide two-way communication between each remotely located talk-back unit and the master control station on the yardmaster's desk on the seventh floor of the communication tower. There are 24 talk-back speakers located approximately 200 ft. apart along the yard ladder tracks. Each talk-back unit consists of a single 8-in. permanent-magnet speaker mounted inside a short horizontal section of 10-in. diameter pipe, which is



Radio handset and control equipment mounted on wall of the engineman's cab

The yardmaster in his office in the tower can see practically all of the yard and, by means of the panel on his desk, can control the loudspeaker in the yard and communicate with the enginemen by radio

The communications tower has structural steel framework, aluminum window frames and sashes, and walls of insulated sheet aluminum panels, 3 in. thick, 3 ft. wide and 8 ft. long

welded to a 2½-in. diameter pipe standard. To talk to the yardmaster an employee merely presses a push-button switch mounted on the pipe standard. The operator at the yardmaster's station acknowledges this call by selecting the key switch directly beneath the indicating lamp. If the yardmaster wishes to talk back to the remote station he depresses a foot switch beneath his desk and speaks into the microphone. The yardmaster can hear messages spoken as much as 50 ft. from a talk-back speaker if there is no excessive extraneous noise.

The paging system provides high-level sound energy necessary to summon or to instruct an individual or group of individuals who may be scattered in a large area. The operator at the master station can speak over a particular paging channel by depressing the proper key switch on the paging selector panel and speaking into the microphone. The same microphone is used for both paging and talk-back units. Nine of these paging speakers are located throughout Davis yard.

All 15 of the A. & S. Diesel-electric locomotives are equipped with two-way frequency-modulated space radio. There are two loud-speakers on each locomotive—one in the engineman's cab and one in the rear compartment used by the switching crew. There are two control units in the cab—one for the engineer and one for the fireman. The rear compartment has one control unit for the switching crew. All crew members on each locomotive thus have access to the radio without moving from their seats.

The fixed-station radio equipment consists of a receiver, transmitter, power supplies and control unit, which are the same as those on the locomotives except that an additional power supply increases the output to 30 watts. This fixed radio station is operated from the office in the control tower and it can also be controlled remotely from the supervisor's office on the second floor of the tower, and from other dispatch points, including the superintendent's office and four interlocking towers. All of the radio equipment in locomotives and tower was manufactured by Farnsworth Television & Radio Corp.

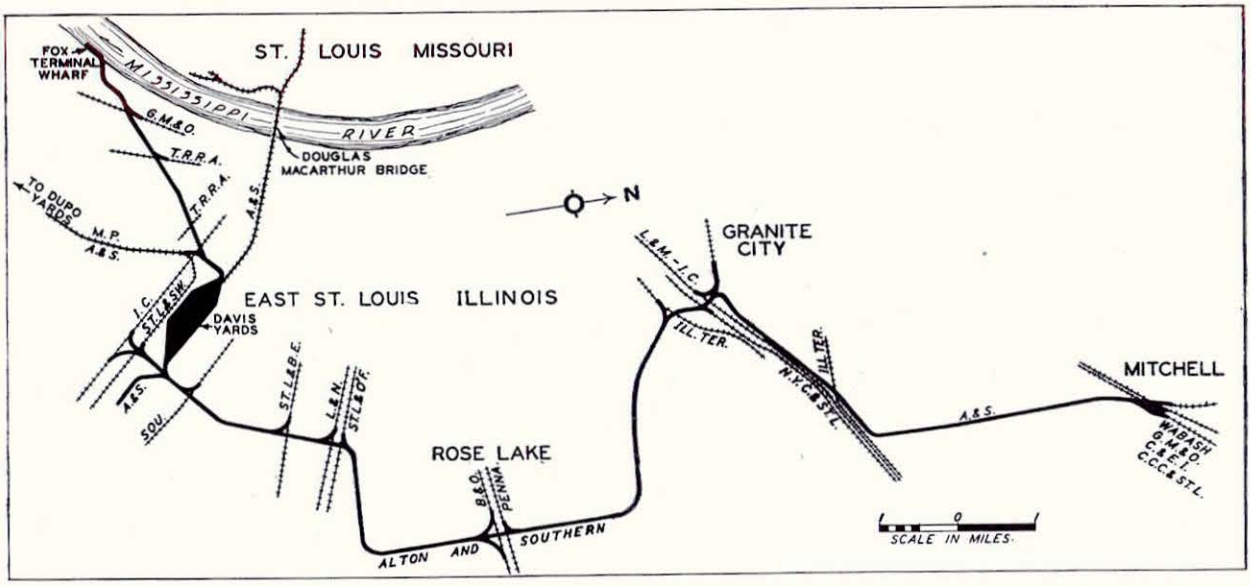
Advantages of Yard Communication System

The yard communication system plays a vital part in the success of the operation by greatly reducing conflicting orders and movements. The system affords yardmasters a method of anticipating unfavorable conditions that might cause delay and congestion. The two-way talk-back speakers along the yard leads afford yard employees a method of prompt, accessible communication with the yardmasters, eliminating delays customarily involved in walking to remotely placed telephones. This is in sharp contrast to the communication system once used in which the yardmasters consumed most of their time walking from one point to another, while the crews spent equivalent time waiting at telephones to receive orders from the "wandering yardmaster."

The nearby yard office, in which the yard clerks are located, has an inter-communication system hook-up with the yardmaster's office over which are broadcast all instructions given by the yardmaster to the switching crews. The yard clerical forces are thus constantly informed of the movement of inbound and outbound trains before their arrival and departure. Alton & Southern operating officers are convinced that the yard communication system has increased the car capacity of Davis yard by 20 per cent.

Advantages of Space Radio

Each day brings to light additional advantages of the two-way space radio on the Diesel locomotives. As a typical example of how radio communication increases efficiency—on one occasion a switch engine placed a car at one of the doors of an industrial plant, and then left for work elsewhere. Soon afterwards, the plant manager telephoned the yardmaster and told him that the situation at his plant had changed and he wanted the car moved to a different location. By use of the radio, the yardmaster was able to reach the crew foreman before the engine had left the vicinity, and direct that the locomotive be returned to the plant and the car respotted. The move was accomplished



The Alton & Southern's Davis yard is convenient to numerous points of interchange with other railroads

in a matter of minutes. This not only saved considerable time for the crew but, of equal or greater importance, gave the industry efficient service, and no doubt made another "satisfied customer."

A recent incident offers a fine example of how accidents are prevented. An Alton & Southern engine, northbound from the Missouri Pacific yard at Dupo, passed a southbound freight train of another line on double track in the vicinity of Maplewood, Ill. The engineman of the Alton & Southern crew noticed a car off-center about ten cars from the rear of the passing train. He immediately reported the condition, via radio, to the Alton & Southern yardmaster, who, in turn, quickly relayed the information to an operator, and the train was stopped before it moved through the intricate switches of North Dupo interlocking, where a derailment or other damage might have occurred. Actual incidents have occurred on the road where crews have been warned by space radio of bad track or other unforeseen conditions after they have passed the last point of train order communication.

The space radio also permits communication between locomotives. The advantage of this during adverse weather in non-automatic block territory is apparent. In the case of grade crossing accidents, for example, it affords an immediate means of communication to summon ambulances or tow trucks to clear blocked right-of-way. Mechanical break-downs on the road can be reported promptly, and engine crews have direct and speedy communication with shop forces.

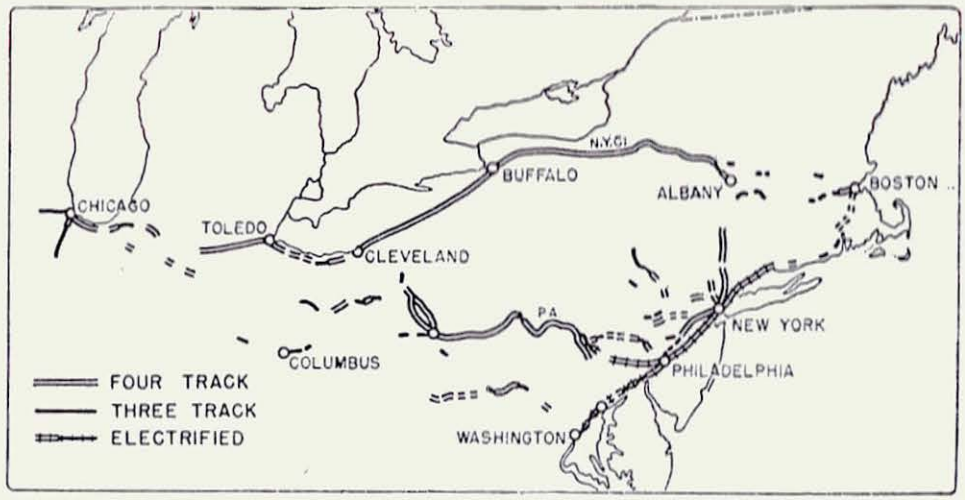
On the run from Davis yard to Mitchell, the northern terminus, the Alton & Southern main line passes through three manually-operated interlockers. Each of the towers at these points is included in the communication network through an inter-communication system also reaching the yardmasters. The towers are also equipped with space radio transmitters and receivers. Movement of Alton & Southern trains is thus facilitated by providing the towermen with a means of direct communication with the men operating trains through their plants. The towermen can instantly advise crewmen of any condition affecting the movement of their train.

New Communication Tower

The new communication tower at Davis yard, completed in August, 1948, is centrally located in the yard. The yardmaster's office is on the top, or seventh floor. This tower is of special interest, not only because of its unusual height, but also for its type of construction. It is 14 ft. square and 62 ft. high from the ground to the rooftop. It has a structural steel framework supported on a concrete foundation. The window frames and sashes are of aluminum, and the walls of the tower are constructed of aluminum panels. Each panel is 3 ft. wide, 8 ft. high and 3 in. thick. The panels are made up of two sections of 16-gage aluminum sheathing with 3 in. of rock wool insulation between. The edges and ends of the panels are tongue-and-grooved so that each panel fits tightly into those next to it. Molly bolts secure the aluminum panels to the steel framework from the inside.

The yardmaster's office is enclosed with eight sections of Thermopane glass, which affords the yardmaster an unobstructed view of the operations in all yards. The yardmaster's office is tightly sealed, and the ceiling and sidewalls above the windows are covered with acoustic material, minimizing interference from distracting outside noises. A modern air conditioning unit keeps the office comfortable in the summer months. The tower is equipped with a central heating system, using an oil-burning furnace.

A standby emergency power supply is provided to supply electrical energy for the operation of the lights and equipment in the communication tower if the commercial electric power fails. This standby machine is a 117-volt, 60-cycle, single-phase Onan gasoline-driven generator rated at 7.5 k.v.a.



Factors Affecting the Railroad Traffic Pattern

By EDWARD L. ULLMAN
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Harvard University

Railroads handled about 50 per cent of the total ton-miles of freight in the United States in 1939, coastwise shipping 26 per cent, Great Lakes shipping 10 per cent, pipe lines 7 per cent, highways 6 per cent, and inland waterways 2 per cent[1]. Railroads handled only about 10 per cent of the passenger-miles, however. Coastal and Great Lakes shipping provided the only serious competition to railroads as movers of heavy goods, though pipe lines, because of their economy, especially for natural gas, may well be more formidable rivals in the near future. Railroads, then, are the principal media through which location factors operate, to influence the distribution of heavy industry and other basic economic activities.

Trackage: Multiple and Single

Conventional railroad maps either put all railroads in one category or classify them subjectively as main lines, secondary lines, and lines "not shown," a classification that might be acceptable if the lines were put in the proper categories, but they seldom are. There is probably as much difference between the poorest and best railroads as between the poorest automobile road and a super-highway. The heaviest-used 10 per cent of United States railroad mileage carries 50 per cent of the total ton-miles, the lightest-used 10 per cent less than half of 1 per cent; and their construction varies accordingly.[2]

Nevertheless, some general conclusions can be drawn from an overall map of United States railroads. Density of lines is greatest in the northeastern quarter of the country; the Appalachian, Ozark, and Rocky mountains show up as barriers; but the most noticeable change in pattern occurs in the level Great Plains at about the 100th meridian, the approximate boundary between humid and semiarid climate and between crop and grazing land.

The principal long stretches of four-track lines are the Pennsylvania from Pittsburgh to New York and the New York Central from Cleveland to Albany. Three-track lines add some mileage, mostly in the same area but extending out slightly farther. The westernmost extension of triple track is Aurora, Ill., the southernmost Washington, D. C., and even these points are not connected continuously with the other three- and four track lines.

Small in extent though the multiple-track sections are, they are almost unique; few other regions have any three- and four-track sections except a few relatively short lines. (One of the longer stretches is a 72-mile segment from London to Kettering, England; another, about 40 miles, from Brussels to Antwerp.) Their presence in the United States reflects the concentration of enormous streams of traffic produced by the world's most highly developed continental region enjoying free trade. In other words, this is the railroad facility corresponding to American mass production for a large home market. Specifically, the three- and four-track

[1] Board of Investigation and Research: The National Traffic Pattern, *79th Congr. 1st Sess., Senate Doc. No. 83*, 1945, p. 22, Table 2.

This article is abstracted, by permission (with some additions and changes by the author), from the April, 1949, *Geographical Review*, page 242, with which article 12 maps appear.

[2] Data from H. H. Copeland & Sons.

sections are related also to topography, e.g., the channelizing effect created by mountain passes in the Appalachians.

In contrast with three- and four-track lines, the United States has a much smaller percentage of double track than most European countries.[3] In northwestern Europe double track is the rule. In the United States it is still the exception in most areas, for the following reasons:

1. Many sections are less intensively developed than northwestern Europe.

2. The number of trains is smaller on many important railroads because of the relatively lighter passenger traffic and the much greater capacity of freight trains.

3. More alternative routes are available in most sections, mainly because of competition between privately owned roads, in contrast with state or regional monopolies in Europe.

4. Because of the preponderance of single track, operating methods have been adjusted to this condition, and single-track capacity has been increased, spectacularly so in recent years as a result of the improvement of signaling.

Between the single-track railroads of the United States differences are great, though quantitative measures of these differences are difficult to obtain. Type of ballast, roadbed, or weight of rail might be used, but the government does not report such figures, and it would be impracticable to obtain them from the individual roads. One possibility remains — signaling data. On this basis single-track roads can be divided into three categories, from highest to lowest capacity: lines with centralized traffic control, lines with automatic signals, and lines without automatic signals.

Signals: C.T.C. and Automatic Block

Centralized traffic control is a recent development peculiar to the United States, which, in addition to other advantages, increases the capacity of single-track lines so much that it is used as a cheap substitute for the addition of second track. Estimates indicates that C.T.C. increases capacity as much as 50 to 80 per cent. One of its characteristic locations is as a link between sections of double track.

In the United States C.T.C. is extensively used in the West, because this is the region where traffic has increased most in recent years. Most heavy-traffic lines in the Northeast were already multiple-track, but some double-track lines have had C.T.C. installed in place of a third track, as on the Boston & Maine, the Rock Island, and sections of the Norfolk & Western and the Chesapeake & Ohio.

Lines with automatic block signals round out the picture of main lines in the United States, though some main lines on which trains operate at relatively high speeds do not have automatic signals. Automatic block signals are installed to increase capacity, speed, and safety and consequently are good quantitative indicators of the character and importance of track.

Inasmuch as no traffic-flow map of railroads can be compiled from available statistics comparable to maps of highways or waterways flow, traffic data must be provided in other forms—maps of tonnage by states (origin and termination) and passenger revenue by regions and textual descriptions of traffic on the most important lines.[4]

The industrial Northeast stands out as the preeminent traffic-producing area for both freight and passengers, and the arid West and much of the Southeast show up as light-traffic areas. The Pocahontas region of eastern Kentucky, West Virginia, and contiguous Virginia originates enormous quantities of coal and thus resembles the neighboring industrial belt in heavy-traffic characteristics, though, as might be expected, it is not a heavy passenger-traffic producer. The Pocahontas region has a freight revenue of $325 million and a passenger revenue of only $34 million, in contrast with New England's $176-million freight revenue and $83-million passenger revenue, a ratio of freight to passenger revenue of almost 10 to 1 for the Pocahontas region and about 2 to 1 for New England.

Main Routes

Two broad zones of movement stand out in the American railroad traffic pattern: first, and most important, the west-east movement across the industrial belt; second, the somewhat parallel movement from the Pocahontas and eastern Kentucky coal fields to the northwest and east. Density of traffic on these sets of lines is so heavy that they stand out even more sharply than on the trackage maps. A third major set of lines might be added by including the eastern ends of the transcontinental lines crossing Minnesota, Iowa, and Missouri. Density on these lines, however, is far lighter than on the other two sets.

The heaviest traffic in America is on the Pennsylvania from Pittsburgh to New York, followed by the coal-carrying Chesapeake & Ohio and Norfolk & Western. The next heaviest, but much less important for freight, is on the New York Central System through the Mohawk corridor. This route divides in the vicinity of Albany, freight density being higher across the Berkshires toward Boston on the Boston & Maine and the Boston & Albany than south along the Hudson to New York. New York, however, stands out as the focus of eastern seaboard traffic, because of the heavy freight flows on the Lackawanna, the Erie, the Lehigh Valley, and the Reading-Jersey Central as well as on the Pennsylvania.

The water-level route of the New York Central along the Hudson and Mohawk rivers is a great advantage and enables the road to compete with the Pennsylvania, even though the Central's distance from New York to Chicago is 961 miles, as compared with the Pennsylvania's 908 miles.[5] Although the New York Central is an important route, it is minor in comparison with the combined flows to New York over the other roads

[3] In France about half the lines are two track or more in comparison with about one-eighth in the United States. In England the proportion of double track is even higher.

[4] H. H. Copeland & Sons have prepared, at great expense, confidential traffic-flow maps for United States railroads. They will not permit these maps to be reproduced, but they have kindly allowed me to use them for research and teaching.

The source of the passenger statistics is *Statistics of Railways in the United States, 1946*, Interstate Commerce Commission, Washington, 1948, which covers only the railroad regions. Statistics by states are not available except for a two-week test period in 1933, in the federal coordinator of transportation's "Passenger Traffic Report," 1934, Appendix 2. Freight statistics by stations and trade areas were also published in the "Freight Traffic Report," 1935, Appendix 3, but they give a misleading picture.

[5] Distances via the freight cutoffs on both lines are slightly shorter (the Trenton cutoff north of Philadelphia on the Pennsylvania, and the Castleton cutoff south of Albany on the New York Central).

from the West and has less than half the freight density of the Pennsylvania alone, which climbs over the mountains.[6] This difference in density is reflected in facilities. Although both lines are four-track, all four tracks of the Pennsylvania are main tracks, whereas on the New York Central only two are built to highest speed standard. Weight of rail on the Pennsylvania is 152 lb. a yard, on the New York Central 127 lb. Both lines have automatic train-stop or cab signals that make signal changes more quickly visible and thus tend to speed operation and raise capacity. The Pennsylvania, however, has recently installed carrier radio communication between Harrisburg and Pittsburgh, which further speeds operations and raises capacity.[7] Also, from Harrisburg to New York the Pennsylvania is electrified—a third capacity-raising factor.

Southward across the great east-west trunks, such as the Pennsylvania and the Baltimore & Ohio, the percentage of coal handled increases until a peak of 75 per cent or more is reached on such roads as the Chesapeake & Ohio, the Norfolk & Western, and the Virginian. About two-thirds of the coal moves west and one-third east; of the westbound, much is ultimately destined for transshipment from Lake Erie ports, primarily Toledo;[8] the eastbound goes principally to Hampton Roads for transshipment northward by boat up the Atlantic coast, to provide eastern New England with coal.

Space does not permit individual notice of the remaining main lines, but they can be readily picked out from trackage maps. Mention should be made, however, of the Louisville & Nashville's coal line from the southeastern Kentucky coal fields to Cincinnati, which has traffic comparable with that of all but the heaviest-density lines just mentioned and heavier freight density than any other line outside the climax area except the short Mesabi iron-ore roads. Other heavy-density stretches are the Illinois Central from the Illinois coal fields northward, the Santa Fe in eastern Kansas, and the Union Pacific between Omaha and Salt Lake City. The Union Pacific has the heaviest freight density (for any considerable distance) of the transcontinental lines, with greatest concentration across Wyoming, primarily bridge traffic funneled across the Continental Divide but also some local coal.

The heaviest Canadian freight density[9] is between Winnipeg and Port Arthur—Fort William, principally wheat from the Prairie Provinces headed for Lake shipment and export. Examination of Canadian traffic-density charts shows that little crosses the United States border. The main Canadian flows are strikingly east-west and remain within Canada.

Four features characterizing traffic flows on United States railroads should be noted.

1. The routes just described are composed of a series of overlapping long, medium, and short hauls. The average length of freight haul in 1946 was 224 miles, with a range from 170 miles in the Eastern district to 303 miles in the Western district; the average passenger journey exclusive of commutation was 130 miles (including commutation 82 miles), with a range from the Eastern district to the Western of 76 miles to 307 miles exclusive of commutation (51 to 205 including commutation).

2. Direction of freight movement is often unbalanced; in general, it is heavy toward the industrial belt and light outbound, with a normal ratio of about 2 to 1 eastbound over westbound on transcontinentals and as much as 3 to 1 or higher in New England.

3. Although the all-important movement of most bulky freight involves relatively little crosshauling, higher-value freight may show considerable crosshauling. The recent Supreme Court decision abolishing the basing-point system for cement and the voluntary action of the steel industry in abolishing basing points for steel may eliminate much crosshauling in these commodities, but brand names, national advertising, and other factors apparently will maintain crosshauling in higher-priced goods.

4. Goods do not always move by the shortest or even easiest route between terminals. The federal coordinator of transportation estimated that in 1934 the average freight car moved about 11 per cent farther than if it had used a direct line in common use. Studies of special commodities by the Board of Investigation and Research in 1939 indicated an average circuity of almost 20 per cent. Competition between railroads is the primary explanation, but valid reasons exist for some circuity, such as avoidance of congested terminals. In a few cases a longer route even has cheaper rates (justified on the grounds of necessarily slower service) such as the so-called differential routes via Canadian lines from New England to the Middle West. Passenger traffic has less circuity because loss of time means more.

Relation of Railroads to Topography

Railroads are extraordinarily sensitive to grades. Many routes try to avoid grades greater than 0.5 of 1 per cent. Most transcontinental main lines have a maximum grade of 2.2 per cent across mountains. Valley alinements on a national scale are discernible in many places, as along the Mohawk Valley or along the Great Valley. One effect of grades is to cause railroads to add extra tracks, even though cost of construction is high, in order to enable the return of pusher locomotives or to run passenger trains around slow freights, as on the Boston & Albany, the Boston & Maine, and the Lackawanna, or to install better signaling in mountains—for example, C.T.C. on the Union Pacific across the Blue mountains of Oregon. Most important, however, are the reduction in number of through routes and the channelizing of traffic, which necessitates extra tracks, as on the Baltimore & Ohio across the eastern Appalachian.

The funneling of traffic through mountains places most large classification yards at points where rail lines fan out on leaving the barrier zone; such points are generally not close to large cities. In addition, of

[6] In number of passenger trains the New York Central seems to be slightly ahead, with 34 scheduled trains in one direction along the Mohawk, as compared with 28 for the Pennsylvania across the Alleghenies. Additional sections are also run on each line. The heaviest passenger density in the United States, outside suburban areas, is on the Pennsylvania between Philadelphia and New York and on the New Haven between New York and New Haven, followed by the Pennsylvania's line to Washington.

[7] "Train Communications on Pennsylvania," *Railway Age*, Vol. 123, 1947, pp. 516-520.

[8] *Transportation on the Great Lakes*, Corps of Engineers, U. S. Army (Washington: 1937); also A. G. Ballert: The Coal Trade of the Great Lakes and the Port of Toledo, *Geogr. Rev.*, Vol. 38, 1948, pp. 194-205.

[9] In contrast with the United States, Canadian traffic density has been mapped in published form, in "Report of the Royal Commission to Inquire into Railways and Transportation in Canada, 1931-32," Ottawa, 1932.

course, most of the large yards are in the heavy-density area, the northeastern quarter of the country.

Sensitive though railroads are to grades, the predominant locating factor seems to be traffic. The heaviest-traveled route in the United States, the Pennsylvania, climbs the mountains to connect the east and west sides of the all-important manufacturing belt. Railroad facilities generally are most numerous in high-production areas; the coal in the Appalachians, for example, acts as a powerful magnet drawing railroads to these mountains. Although relief strongly affects the local or site alinements of major American railroads, production and traffic appear as more important determinants of their regional arrangement and location, with the result that most of the major lines run east-west "across the grain" of the country.

American railroads have made adjustments in size, power, and efficiency which reflect the nature of the transportation problem of the United States. Some comparisons with parts of Northwest Europe, the only other area of comparable industrial development, reveal a consistently larger scale of operations in the United States, e.g. (1) average weight of rail 20-30 per cent heavier; (2) axle loads permitted on main-line track and bridges 30 per cent greater; (3) freight cars almost three times as large as in France; (4) maximum train weights of 10,000-15,000 tons and more, compared to 1,600-2,000 tons in France; (5) much greater monthly mileage run by locomotives and cars (5 times as much for modern steam locomotives as in France).[10]

The larger capacity of American railroads stems logically from the continental, longer land haul characteristics of the United States compared with the short hauls of a maritime and peninsular region broken up into small nations. Furthermore, it has been possible to develop inland waterways in Europe to a greater extent. Russia, the other large land power of the world, also requires a large scale land transport net, but the less advanced stage of her industrial development has prevented as complete fulfillment of this goal as in the United States; nevertheless, the broad gage Russian system has a high freight density per mile of line and operates heavy trains.

The size of United States railroads (and of the Russian system, to a lesser extent), therefore, reflects to some degree the large scale needs of a continental country, whereas the smaller scale European railroads may well be a proper reflection on West European needs. Perhaps each area could learn something of value from the other, such as the advantages of the smaller European units for frequent and flexible passenger service or of the larger American units for more economical freight movement.

[10] *cf.* Maurice Parde, "Les Chemins de Fer des Etats Unis," *Annales de Geographie* (Vol. 56, 1947), pp. 274-94.

I.C.C. GETS BRIEFS IN EX PARTE 168 CASE

Railroads say "dynamic, progressive industry," made so by "adequate earnings," offers "only real hope" for lower rates as time goes on; N.I.T. League brief is "not in support" of carrier petition, while shippers and other parties are virtually unanimous in their opposition

The "only real hope for relatively lower railroad rates as time goes on is to be found in a dynamic, progressive railroad industry" and "this is possible only under adequate earnings," the carriers told the Interstate Commerce Commission this week in a brief in support of their Ex Parte 168 petition for authority to make a permanent increase in freight rates. The proposed increase would be a general advance of 13 per cent, with exceptions, and it would supplant the interim increase of 5.2 per cent which was approved by the commission in its report of December 29, 1948.

The proceeding is set for further hearing in Washington, D. C., on May 13 for the receipt of "rebuttal testimony only," and oral argument before the entire commission will follow, beginning May 16. The briefs were due May 2, and the railroad presentation was one of more than 50 made public by the commission on May 3. Briefs filed on behalf of shipper interests bear out the National Industrial Traffic League's finding that "shippers of the whole alphabetical range of commodities, from acid to zinc," are "almost unanimous" in their opposition to the railroad proposal.

N.I.T. League Favors Adequate Earnings

As for itself, the league, which supported the railroads in the Ex Parte 162 and 166 proceedings, labeled its present brief as one "not in support of the carriers' application." Nevertheless, the brief concluded with this statement: "If, on all the evidence, it appears that there is a real need of additional revenues for the purposes stated in the National Transportation Policy, and if general rate increases reason-

ably may be expected to provide such needed revenues, the league does not oppose nor speak against the granting of such general increases and in such form as the commission may determine necessary and appropriate to fulfill such needs."

The railroad brief was in two parts, Part I being a 109-page document setting out the carriers' revenue needs and arguments designed to show that the rate-increase proposal was the proper way to meet such needs; and Part II, a 126-page document which defended the proposed increases as they would affect various specific commodities. The brief urged prompt commission action "so that the carriers may be assured of a reasonably healthy condition in order that they may maintain their credit, procure additional equipment which is now urgently needed, and rehabilitate and improve their properties generally to take care of the demands of the public for adequate transportation service."

It suggested that the "ultimate question" presented in the proceeding might be "fairly" stated as follows: "In a period of heavy traffic, when the prices of commodities and the volume of business activity are high, should the earnings of the railroads be held down by government mandate to an inadequate level although economic conditions are such as to permit adequate and even ample earnings?" The brief went on to assert that "in the light of the National Transportation Policy" there can be "only one answer" to the question.

Poor Roads Are High-Cost Carriers

"An inadequate rate level," it continued, "means inadequate earnings, and this in turn means a high cost of performing transportation, an inferior quality of transportation service, and safety standards which fall short of those which could be and should be attained." One way to reduce operating costs, the brief went on to suggest, is to provide the best in the way of plant, equipment and facilities.

Meanwhile, the brief had dealt with protestant contentions that the higher rates proposed would force them to use other means of transportation. The railroads challenged such evidence, pausing, however, to suggest that "if those who use other forms of transportation can thus escape bearing a share of the increased costs which the railroads have incurred, it cannot be said that they have a cause of complaint against the proposed rates." The brief then went on to point out that evidence as to potential losses of traffic "necessarily assumes that other forms of transportation will not find it necessary to increase their rates." It continued to remind the commission that "many of the motor carriers" are now before it seeking rate increases.

Figures were included to show that the Ex Parte 162 and 166 increases "produced substantial sums of money." The evidence on this matter was summed up as having indicated that "on the basis of 1949 freight traffic under the rates in effect today, which are approximately 51.7 per cent higher than those in effect on June 30, 1946, the increased revenues resulting from the authorized increases in rates and charges will approximate $2,666,900,000." Also, the brief said it was incorrect to assume that the railroad rate increases of recent years have been responsible for all of the diversion of traffic to other forms of transportation that has occurred in the last few years. Other causes of traffic losses, as listed in the brief, have included car shortages, the faster transit time of the trucks on short hauls, the minimum-loading orders of the Office of Defense Transportation, and the drop in export shipments, particularly of coal, since 1947.

It was conceded that there would be diversions requiring "many individual adjustments" in rates after the proposed general increase had been applied. And the responsibility of the railroads to make such adjustments was recognized, for making them "has been the continuing policy of the carriers," the brief assured the commission. Then it went on to insist that the railroads are "entitled to an opportunity" to recoup their increased costs. "If the increases are not authorized," it added, "we shall never know whether the traffic could have stood them or not. Only experience can tell."

Cost Increases vs. Rate Advances

The total increase since 1939 in wages, payroll taxes, costs of materials and supplies, and other expenses was put at $3,763 million, a rise of 92.8 per cent. And this included no allowance for the prospective cost of the 40-hour week for non-operating employees which becomes effective September 1. The estimated revenues at present rates, fares and charges as applied to 1949 traffic were found to represent an increase of $3,038 million, or 47.7 per cent, over what the revenues would be at 1939 rates. Thus it was calculated that the additional revenue now sought would not add enough to the Ex Parte 162 and 166 increases to offset the increases in operating expenses which have occurred since the prewar years.

A table in the brief indicated that if the proposed increases became effective July 1, this year's net railway operating income would amount to about $866 million, a return of 3.79 per cent on net investment as compared with the 1948 net railway operating income of $1,002 million, a return of 4.38 per cent. If there is no further increase beyond the presently-effective interim advance, the 1949 net railway operating income would be $714 million, a return of 3.12 per cent. While these estimates "do not contemplate anything in the nature of a depression or a serious economic disturbance in 1949," the brief warned that there is always the possibility that such disturbance will occur. And that would present the alternatives of increasing rates "at a time when the economy of the country would be least able to stand" such advances, or letting the railroads face "ruination."

The "Extreme Minimum"

Even with the propsed increases the carriers are not sure they can "get by," in view of the prospective inauguration of the 40-hour week for non-operating employees. But the brief assured the commission that they "will do their best," although "much depends upon the volume of traffic in the future." It added, however, that the present proposal represents the "extreme minimum," and any scaling down of the application would deal "a most serious blow to the industry and to the national economy."

Previously, the brief had discussed the testimony of protestant witnesses who suggested that the railroads should seek to improve their net earnings by operating more efficiently and economically. Railroad evidence in answer to such testimony was summarized in the brief's argument in support of this general statement on the matter: "The record in this proceeding portrays the unceasing determination to increase operating efficiency by every means within the reach of the railroads. The record of past performance is impressive. Inadequate earnings and shortages of materials and supplies have handicapped the railroads from making still greater progress."

Emphasis on Economies

Without criticizing railroad management for not having accomplished more along that line, the N.I.T. League brief suggested that the time has now come to shift the emphasis from general rate increases to "proper economies and cost reductions." To meet increased prices and wages, the railroads thus far have resorted only to the rate-increase method, the league said. Pointing up the opposition to the present proposal, the brief said that "many branches of industry are for the first time (in recent years) opposing the carriers, notably bituminous coal interests and the paper and pulp industry." The brief's statements of the league position, in addition to those noted above, said that the organization "does not support this application, beyond recognizing the paramount need for adequate railroad transportation, which means that transportation rates, fares and charges must provide the necessary revenues."

While there were divergent views among its members, the membership "as a whole" authorized the league to take a position urging the commission that "proper conclusions" be drawn from the evidence along the following lines:

1. That always the paramount consideration must be, under the National Transportation Policy, that the country shall have an adequate system and efficient services of railroad transportation; that railroad revenues should be sufficient to cover operating costs, full maintenance, and a fair return to the owners.
2. Taking no position, for or against the carriers, as to what is a normal, fair rate of return, the league insists that the appropriate percentage shall be applied to the valuation for rate purposes determined by the commission, and not to the higher valuations used in the railroad petitions and exhibits.
3. That the national economy and the high cost of living require that transportation charges shall be held down to the lowest level consistent with maintaining transportation in full vigor.
4. That the carriers' claims to probable revenue deficiencies should be thoroughly tested and determined upon full proof.
5. And of "exceeding importance," that railroad rates are reaching the saturation point; that further increases produce comparatively small increases in net revenue (except temporarily).

The suggestion that emphasis should be shifted to operating economies was added to the latter proposition; and, in that connection, the league cited testimony wherein railroad officers had indicated economies already achieved. It recommended that the carriers continue to pursue such economies. As to the proposed rate increase, the league said the commission could not, upon the record, conclude otherwise than that the "preponderance of opinion of the shipping public is that the railroad rates have reached the peak."

It went on to express its view that an "unfortunate situation" exists when "virtually the entire shipping public" is of that view. And it even suggested that "a moderate reduction in rates (though statistically unjustified) might lead to public cooperation of shippers in continuing the full use of the railroads to the fullest possible extent, rather than planning how to avoid railroad service by plant relocation, changes of distribution facilities, use of other facilities, etc."

Another Call for Economies

The brief filed on behalf of the National Association of Railroad and Utilities Commissioners also called for the operating-economy approach. That, it said, was the "only practicable" source of relief available to the railroads, because "the conclusion is inescapable that the granting of further increases will cause the railroads to reach and pass the point of diminishing returns, if, indeed, that point has not already been reached as a result of the interim rate increase of last December."

Without conceding that this interim increase has resulted in just and reasonable rates, it was the association's position that no further advance should be authorized at this time. "Like the smoker of opium who finds it necessary to increase the dose, the rails would have to come back again for more rate increases to make up for the loss of traffic from the last increase." the brief said in another place. It also alleged that the carriers had overestimated their revenue requirements.

"Since the issuance of the interim report," it continued, "there has been a continuing downward trend in national production, railroad traffic, and prices of materials and supplies. While the nation is still in a relatively prosperous condition, it is obvious that we are in a period of mild decline or recession. This is borne out by the railroads' own revised estimate of 1949 traffic volume. At the March hearing, the railroads estimated 1949 revenue ton-miles at 8.2 per cent less than 1948 actual, and 5.5 per cent less than the estimate for 1949 which they presented at the opening hearing on November 30, 1948.

"In consideration of this development, it appears reasonable and proper for the commission to now make some downward adjustment in the level of net railway operating income deemed necessary to meet railroad requirements. Considering a billion dollars net railway operating income as the desirable average to be achieved over a period of years, there is less justification today than there was six months ago to strive for an amount substantially in excess of that sum."

As noted at the outset, the briefs of protestants, which included individual shippers, shipper organizations, and state and other governmental agencies, pointed up the opposition of those interests. Also, they argued against the increase on the basis of evidence indicating that traffic would be diverted from the railroads if petition were granted.

Conferring at the close of one of the sessions are, left to right—Second Vice-President F. W. Gottschalk, technical director, American Lumber & Treating Co.; President G. B. McGough, superintendent, Bond Brothers; First Vice-President J. S. Giddings, superintendent treating plant, A.T.&S.F.; and J. B. Akers, chief engineer, Southern

Wider Use, Greater Benefits, Sought

Wood Preservers, in convention with railroad men and other users at St. Louis, point the way with new or improved preservatives, advanced treating techniques, and suggestions for more effective utilization of forest products

The American Wood-Preservers' Association, with its large stake in the railroad industry, went back to the city of its birth — St. Louis, Mo. — for its forty-fifth annual meeting, which was held on April 26-28. However, whereas the organization meeting of the association, on October 10-11, 1904, was limited in scope and attended by a small group of men from an industry still relatively small in the United States, the annual meeting this year was featured by a comprehensive program and a record-breaking attendance (566 members and guests) of preservative producers, timber treaters and forest-products users—including a large number of railroad men from all parts of the country.

Underlying the program, which included 29 technical reports and 21 papers, were the dominant themes of timber conservation, improvements in wood preservatives and wood treating methods, improved timber products, and greater effectiveness and economy in the use of such products. While most of the reports and papers were of direct or indirect interest to the railroads, either as timber users or treaters themselves, among those of special interest to this group were those dealing with several of the newer chemical preservatives, including copperized chromated zinc chloride, announced as a new development of the Koppers Company and E. I. DuPont de Nemours & Co., Grasselli Chemical Department, and on Boliden Salt, which is being introduced into the United States from Sweden; a paper on progress in the development and use of pentachlorophenol; and reports on fire-retardant preservatives, on the use of pressure preserved lumber in railroad car construction, on piles and timber for marine construction, and on the treatment of poles and crossarms.

Of particular interest to railroad bridge construction and maintenance forces was a paper on the practices on the Southern to insure longer life of treated timber in bridge and trestle construction, by E. S. Birkenwald, engineer of bridges of the Western lines of that road. The Committee on the Handling of Forest Products presented two motion pictures, one showing recent developments in the handling of crossties and switch ties at the East Point (Atlanta) plant of the Southern Wood Preserving Company, and the other, the Stemm Tie Piler in use at the Dalles (Ore.) yard of the Forest Products Treating Company.

Railroad Man Becomes President

President G. B. McGough, superintendent of Bond Brothers, Louisville, Ky., was the presiding officer

throughout the convention, assisted by First Vice-President J. S. Giddings, superintendent of the treating plant of the Atchison, Topeka & Santa Fe, at Somerville, Tex. For the first time, however, each general session was presided over by a general chairman—the session on Utilization and Service Records being conducted by J. B. Akers, chief engineer of the Southern and a member of the Executive Committee of the Association.

In the election of officers for the ensuing year Mr. Giddings was advanced to president; F. W. Gottschalk, technical director, American Lumber & Treating Co., Chicago, was advanced from second vice-president to first vice-president; W. R. Yeager, inspection engineer, Western Electric Company, New York, was elected second vice-president; H. L. Dawson was re-elected treasurer; and the following were elected to the Executive committee—P. D. Brentlinger, forester of the Pennsylvania, Philadelphia, Pa., and I. C. Miller, vice-president of T. J. Moss Tie Company, St. Louis.

Registering at the convention are, right to left—John S. Penney, president, T. J. Moss Tie Company; P. V. Thelander, assistant engineer maintenance, C.&N.W.; Harold F. Round, assistant forester, P.R.R.; and H. M. Harlow, assistant general supervisor of bridges and buildings, C.&O.

in Timber Treatment

Left to right—Ricker Van Metre, president, Wyoming Tie & Timber Co.; C. D. Turley, engineer of ties and treatment, I.C.; and C. S. Burt, assistant to director purchases and stores, I.C.

In addition to the foregoing, Walter Buehler, special representative of the Barrett Division, Allied Chemical & Dye Corp., and Carl G. Crawford, vice-president of American Creosoting Company, were elected honorary members, and the following were elected to the Nominating committee: E. P. Bernuth (Bernuth, Lembcke Company); C. Miles Burpee (*Railway Age*); B. D. Howe (Louisville & Nashville); G. Q. Lumsden (Bell Telephone Laboratories); P. B. Mayfield (International Creosoting & Construction Co.); and J. N. Roche (Koppers Company). Houston, Tex., was selected for the convention next year, which will be held on April 25-27. The secretary's report showed an increase of 325 new members during the year, bringing membership in the association to the all-time high of 1,430.

The convention was welcomed to St. Louis by Clark Hungerford, president of the St. Louis-San Francisco, who spoke of the progress made by the wood-preserving industry and of the service which it had rendered to the railroads—pointing out, for example, that by careful selection and chemical treatment 10 to 20 years have been added to the life of crossties. With respect to the overall contribution of the industry, he estimated that, without the chemical treatment of wood, the country's annual timber requirements would necessarily be increased by some 15 million board feet.

President Stresses Timber Conservation

In his presidential address following Mr. Hungerford, President McGough stressed the contribution of the wood-preserving industry in the conservation of the timber resources of the country, and urged the enlight-

Left to right—Walter P. Arnold, assistant to vice-president, Koppers Company, Wood Preserving Division, and P. D. Brentlinger, forester, P.R.R.

While presiding over the session of the convention on Timber Utilization, J. B. Akers, chief engineer of the Southern, and a member of the Executive Board of the association, challenged the wood-preserving industry to go beyond its present great contribution to the railroad industry in preserving timber products against decay, and to develop further means for preserving the *physical characteristics* of these products—affording greater protection against splitting and checking and premature mechanical destruction in service. He also urged still greater participation of railroad men in the activities of the association.

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enment of more timber users as to the advantages of treated wood. "The wood-preserving industry," he said, in part, "largely through this association, has rendered a great service, not only to the railroads, utilities and other users of timber products, but to our nation as a whole, in helping to conserve one of its principal natural resources. It was necessary to deplete our forests during the recent war years much faster than normal-growth replacement, so that any forest products that can be treated with preservatives will not only effect economy and greater service for the user, but will make a helpful contribution to the country's program for the conservation of our forests."

Prolonging the Life of Bridge Timbers

In one of the feature "users" papers, E. S. Birkenwald, engineer of bridges of the Western lines of the Southern, Cincinnati, Ohio, spoke of the importance of timber conservation to the railroads in maintaining an adequate supply of structural grades and of holding down bridge and trestle maintenance and renewal costs, and then, based largely upon the practices of the Southern, he described a number of expedients employed to that end. He also called for reviewing specifications, studying actual service conditions, and developing new methods, both in the interest of timber conservation and of securing greater service life.

Some of the more important points made by Mr. Birkenwald in the interest of more durable construction are:

(1) Avoidance of notches or dapping, wherever possible, and especially in structural lumber subjected to high horizontal shearing stresses.

(2) Preframing and preboring lumber before treatment, unless the methods of manufacture do not guarantee a good fit when making the installation in the field.

(3) Taking measures to protect the limited permitted cut surfaces and holes bored in the field after the lumber has been treated.

(4) Preboring vertical holes in bridges and trestle ties in the vicinity of the running rails to permit drainage of water away from the tie plates and to obtain better penetration of the treatment in the tie plate area.

(5) The use of drive dowels, installed prior to treating, while the lumber is still green, to prevent splitting and checking.

(6) The expedient use of Tupelo gum strips to prevent crushing of caps of inferior quality.

"It is evident," Mr. Birkenwald said, "that drawing room practices alone, tending toward the preservation of our timber supply, will not accomplish a great deal unless the right kind of lumber is used for the service intended, the millwork done in preframing and preboring timber is accurate, and the handling and installation of lumber by the field forces executed with care, skill and accuracy. Specifications requirements for timber should be reviewed jointly by consumers, producers and technical advisers with a view of providing the right kind of lumber for the service intended, thereby avoiding the waste of labor and materials."

With regard to the vertical boring of bridge and trestle ties in the tieplate area, Mr. Birkenwald said that originally it was felt that such ties should be prebored for spike holes. The Southern is now using three track spike holes at each tie plate area.

Concerning the doweling of trestle caps, particularly pine, to prevent checking and splitting, he said that horizontal drive dowels are generally placed in pairs at each end with an edge distance of 1½ in. and an end distance of 6 in. Intermediate drive dowels in pairs are spaced at between 5 and 6-ft. centers, with an edge distance of 1½ in. Field observations, he said, seem to indicate that the addition of drive dowels is worth the extra expense of installation.

With respect to the use of such dowels in fir posts of large dimension to prevent splitting and checking, he said that four drive dowels are used at each end in pairs at right angles to each other, with a 6-in. end distance and a 2-in. edge distance. Where the posts are long, he pointed out, it is desirable to use intermediate drive dowels—two pairs at right angles to each other, spaced approximately 8 to 10 ft. on centers.

Mr. Birkenwald called for the development of practices to reduce splitting and checking during seasoning; the possibility of hardening by some methods, compatible with present or future treating processes, of surfaces subject to abrasion or crushing—principally in crossties, switch ties and bridge and trestle ties underneath the tie plates; the improvement of treated timber for caps, which would be resistant to crushing on tops and bottoms, as well as having the capacity for taking high bending stresses caused by pile settlement; the development of treating methods to assure full penetration of all sapwood, and deeper penetration in hardwoods, without setting up forces which might produce splitting and checking under service conditions; and the development and use of a treatment to prevent the attack of fungi on freshly cut lumber before it can be adequately seasoned and treated. All of these avenues of study and research, he said, are of great interest to the railroad industry, and, if pursued, may lead to results well worth the time and money spent on them.

Continuing its assignment from last year, the Committee On Recommended Practices for Pressure Preserved Lumber in Railroad Car Construction, of which W. P. Arnold (Koppers Company) was chairman, presented a list showing that during 1948 16 roads or car users had used 2,700,431 ft. b.m. of creosoted and salt-treated lumber for a variety of car parts, including stringers, decking, sills, furring, roofing and running boards. It also presented further information relative to the decking of 12 flat cars, reported on in its 1942 report.

"These cars," it said, "were placed in service at an industrial plant in Charleston, S. C., in 1936, and have been used continuously since that time, principally for hauling poles and heavy lumber. Three of these cars were decked with untreated pine, and nine with various types of pressure-treated gum and pine. In 1941, extensive repairs were made on the untreated decks. No repairs were made on the treated decks during the first five years' service.

"In January, 1949, after 13 years, the creosoted decks were still in fair to good condition. It is estimated that total replacements of the treated decking since 1936 have been about 20 per cent. Cause for this replacement was breakage, not decay. The untreated decks have required 100 per cent replacements. Creosoted material was used for replacement."

Treated Poles Show Superior Life

In a paper on Treated and Untreated Poles, Bror L. Grondal, professor of forest products, College of Forestry, University of Washington, Seattle, Wash., reviewed the performance, in service, of transmission and distribution poles, as noted during extensive valuation surveys occasioned by condemnation suits in the State of Washington. During the surveys, 9,318 alternate poles in lines were studied and given a percentage rating based upon their hypothetical original condition when first set. Poles that were incised and butt treated with coal tar creosote were found in excellent condition after long terms of service. Records of untreated Douglas fir poles, which also showed exceptionally good service, indicate, according to Professor Grondal, that, with proper pressure treatment, very fine service can be anticipated from treated Douglas fir. According to the paper, treatments given with preservatives other than coal tar creosote gave very erratic results.

The Committee on Pole Service Records, of which C. H. Amadon (Bell Telephone Laboratories) was chairman, presented brief comments or reports on 12 different pole installations under observation, with one detailed report containing data on creosoted southern pine poles in Tennessee, with a 12-lb., full-cell treatment—particularly with regard to the penetration of poles in which fungus infection was found and reported. The findings, according to the committee, quite definitely point up the relation between penetration and the incidence, or accident, of fungus infection.

The Committee on Recommended Practice for the Preservative Treatment of Crossarms presented a specification as tentative practice, which covers both the empty cell pressure process and tank treatment. There preservatives—creosote, pentachlorophenol, and copper naphthenate—are listed as being satisfactory, but it is pointed out that mixtures of these three may be acceptable, such as of creosote and pentachlorophenol. For hot climates the specifications state that creosote may be mixed with petroleum to increase its water repelling properties and retard the evaporation of preservatives.

Copperized Chromated Zinc Chloride

One of the latest developments in preservative formulations—copperized chromated zinc chloride, a joint development by the Koppers Company and E. I. DuPont de Nemours & Co., was discussed at length in a paper by W. P. Henry (Koppers Company) and R. J. Kepfer (E. I. DuPont de Nemours & Co., Grasselli Chemicals Department). This new formulation, which resulted from work conducted to further improve C.Z.C. (chromated zinc chloride), was said to have been evaluated in pilot plant treatment, and to show excellent wood-preserving qualities in accelerated service tests. Of the many formulations considered and evaluated, the best and most economical preservative results were obtained with a composition containing 73 per cent zinc chloride, 20 per cent sodium dichromate, and 7 per cent cupric chloride.

According to the paper, results of tests reveal that copperized chromated zinc chloride possesses greater permanence of its toxic constituents than does C.Z.C., and that corrosion to attached hardware is about the same in wood treated with the new product as in wood treated with chromated zinc chloride or untreated wood. Pilot plant trials, it was pointed out, indicate that handling, treating and control of solution equilibrium are no different than would be expected with C.Z.C. or any other salt preservative containing more than one type of toxic ion. Further conclusions by the authors are:

"Tests run by the Koppers Company Wood Preserving Fellowship at the Mellon Institute of Industrial Research in Pittsburgh indicate that no loss in strength results from the use of Copperized chromated zinc chloride for wood treatment.

"Results of glow tests indicate no considerable adverse effect on glowing characteristics of wood treated with copperized chromated zinc chloride.

"Accelerated service tests indicate a service life for wood treated with 1 lb. per cu. ft. of copperized chromated zinc chloride about equal to that of wood treated with 2.5 lb. per cu. ft. of chromated zinc chloride, and much better than obtained with ¾ lb. per cu. ft. of C.Z.C. or of plain zinc chloride.

Use of Boliden Salt in Sweden

Another paper, by Thomas J. Reese, consultant, U.S.A. division of Boliden Mining Company, New York, was a progress report on the developments and use of Boliden Salt in Sweden—a salt mixture which includes the already-mixed ingredients prepared in 220-lb. drums, to which is added crystalline zinc sulphate (3 parts to 4 parts Boliden Salt).

According to the author, Boliden Salt, which was invented in 1935 and has been in practical use since 1936,

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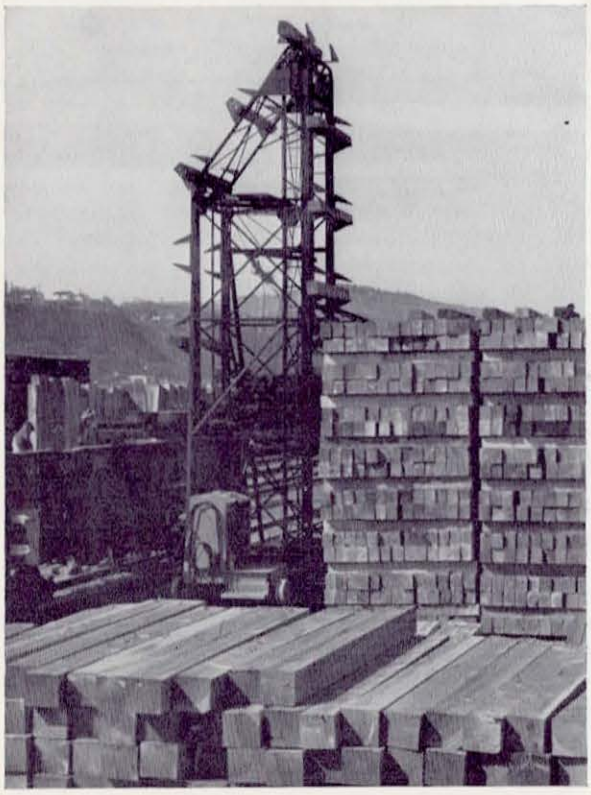
Through the haze of uncertainty and all the other factors which influence business activities, one ray of hope is focused on the encouraging availability of materials of construction which not so far back were on the restricted list. Inventories of most basic construction materials, including the two most vital to the wood-preserving industry—timber and preservatives—have accumulated sufficiently to enable prompt delivery, and, of course, coupled with availability is lower timber cost. Planners are again free to consider structural materials on their merits or economies for a particular structure, rather than primarily on their availability alone.—*From the report to the convention of the Service Bureau of the American Wood-Preservers' Association.*

has fully satisfied the requirements of a good preservative. Besides the fundamental properties, such as toxicity to wood destroyers, permanence and harmlessness to wood, Boliden Salt has the advantage as a salt of leaving a clean, odorless, non-corrosive and paintable treated wood. In addition, it is somewhat fire resistant and quite economical, as it is based on cheap and simple chemicals.

The suitability of the Boliden Salt has been proved



The Steam Tie Piler can unload from box or gondola cars and, from any one position, can pile ties three stacks wide, 30 ft. high, and to a depth of 100 ft. or more back from the machine. This illustration is taken from a motion picture presented at the convention and shows the machine in operation at The Dalles (Ore.) yard of the Forest Products Treating Company. Handling speed ranges from 10 to 16 ties per minute

against decay, termites, Baltic marine borers, and other wood destroyers by official tests and by the experience of more than ten years practical use. A simple method for its application by the full-cell process has been developed. The apparatus is simple and no heat is needed.

In Sweden, the Boliden Salt to a very large extent has replaced creosote, its main use being for treating poles and crossties, and thus Sweden is independent of the fluctuations in the supplies of creosote. Boliden-treated wood has found a variety of other uses, such as piles, silos, fence posts, greenhouse timber, bridges and construction timbers. The author says that the total amount of wood Boliden-treated since 1936 is more than 48,000,000 cu. ft., and that in 1947 alone the quantity was 10,000,000 cu. ft.

In a paper entitled "Pentachlorophenol Comes of Age," by Ira Hatfield, consultant in wood preservation, Monsanto Chemical Company, St. Louis, Mo., the author presented a brief chronological history of the development of pentachlorophenol as a wood preservative and traced its entry into the various fields of wood preservation. According to the author, the advent of pentachlorophenol has helped generate a new interest in extending the use of preservative-treated wood, and the efforts being expended to increase the use of this preservative will help increase the use of all preservatives.

Pentachlorophenol Comes of Age

Since Penta has already demonstrated its worth for controlling decay, termites and wood-boring beetles, it is the author's belief that it will be used in evergrowing volume for home construction and farm buildings, for industrial buildings, and for a variety of uses by railroads and highways, utilities and mines. Suggested uses in the railroad field include floating docks, platforms, decking, car lumber, fence posts, guard rails and bridge timbers especially, it was pointed out, where paintability and freedom from possible discoloration or contamination are desired. It was also pointed out that Penta will be used to "boost the toxic value of presently used preservatives."

It is anyone's guess how much pentachlorophenol will be used for treating railroad ties, according to the author. Much work, he said, is now in progress to select the best petroleum oils to use for such purposes, and there is no doubt that pentachlorophenol will be used with creosote and creosote-petroleum mixtures in order to take advantage of the combined valuable properties of pentachlorophenol and creosote.

Fire-Retardant Treatments

Among the various reports of the Preservatives committees, one on fire-retardant preservatives, prepared by a committee of which H. M. Harlow (Chesapeake & Ohio) was chairman, presented information concerning the formulation, characteristics and use of the fire-retardant chemicals being sponsored by five manufacturers. The committee also offered descriptive information and suggested specifications for four fire-retardant formulations in current use: Chromated zinc chloride; chromated zinc chloride (F.R.); Minalith; and Pyresote.

Allied somewhat with this report was the report of the General Committee on Preservative and Fire-Retardant Treatment of Laminated Members, of which F. H. Kaufert (University Farm, University of Minnesota) was chairman. With regard to the strength and durability of glue joints in beams laminated from lumber previously pressure-treated with wood preservatives and fire retardants, the committee quoted from a report by M. L. Selbo, chemical engineer, as follows:

"The gluing of pressure-treated lumber without resurfacing the material after treatment did not, in general, produce satisfactory bonds. When the lumber was resurfaced after treatment, however, good quality joints were obtained with several species—preservatives—glue combinations, while other combinations gave definitely unsatisfactory results."

In summary, the committee said that there is still a great deal to be learned regarding gluing treated wood, and that combinations of glues and treatments must be given further careful study before they can be used with any assurance of safety.

The feature of the report of the Committee on the Use of Pressure Preserved Piles and Timber in Marine Construction, of which R. H. Mann (Service Bureau, A.W.P.A.) was chairman, was a table of recommended practice for piles and timber, covering various species of wood and various preservatives. It was pointed out that the salt treatments listed are for the prevention of decay, and are not recommended as equivalent to creosote, but may be used for material which has to be painted or for parts of structures where, because of occupancy, odor, or for other reasons, creosote might be unsuitable.

Other reports and papers of interest to railroad men included that of the General Committee on Soil Bearing Loads for Piles and Poles, which presented a bibliography of important articles on this subject; a twentieth progress report on the International Termite Exposure Test being carried out with the cooperation of a number of agencies; several reports of the Preservatives Committee dealing with specific preservatives; a report on the Corrosion of Metal Fastenings on Zinc Chloride-Treated Wood After 40 Years; a paper on the Air Seasoning of Red Oak Crossties, by J. S. Mathewson (Forest Products Laboratory), C. S. Morton (Chicago, Burlington & Quincy), and R. H. Bescher (Koppers Company); and reports on Marine and Foundation Pile Service Records, on Post Service Records, and on Recommended Practices for Pressure Preserved Wood in Highway Construction.

ROLLING STOCK LUBRICATION PROBLEMS

Additives suggested for year-around car oil; choice of roller-bearing lubricants a matter of economy; let the Diesel engine choose its own oil

By **WILLIAM M. BARR**
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Until recently practically all railroad cars were equipped with friction bearings and these were lubricated by being packed with waste saturated with oil. There is a wide difference of opinion as to the character of waste which is best to be used. It has been common practice in freight cars to use a cheap cotton waste. The Association of American Railroads has fixed a standard for this product. This waste should be as free from lint as possible and should be a long strand waste to avoid short fibers and lint working under the bearing, thus shutting off lubrication, causing dry friction which naturally results in heating of the bearing.

Summer and Winter Oil?

For many years nearly all railroads used two grades of oil to meet seasonal temperature changes and there was little regard for the type of oil, whether of naphthenic or paraffinic base. It was especially desirable in periods of low temperature to have an oil with a low pour point. With the older oils, a large percentage was naphthenic base without much regard to the tarry matter contained in the oil. Such an oil in zero or sub-zero temperatures would thicken long before it reached the pour point. This had a tendency to roll the packing and actually push the waste out of the boxes.

It was found that, if limits were placed on the insoluble and tarry matter and an oil contained a high percentage of paraffin base, the oil would not thicken to the same degree as the napthene base oil and, therefore, would not roll the packing. Even though the oil became solid, as soon as the journal began to move enough temperature was produced to liquefy the oil and a much improved performance was obtained.

Increasing speed both in freight and passenger cars, together with increased weight on journals, made this problem more difficult. Such conditions hastened the development of the roller bearing for railway equipment. This appears to be the answer to the problem of lubricating passenger cars.

Many of the roads are getting away from two grades of oil for summer and winter service and all-weather car oils have been developed that are quite successful. However, there still are many carmen who insist that heavier oil is necessary for hot-weather service. Obviously, the lighter oil shows better capillarity in the waste, but the film strength of such an oil is much below that of the heavier summer car oil. It appears from this that added film strength of the lighter oil will give better lubrication than heavier oil without an additive. Therefore, there is some tendency toward the addition of a film-strength compound to car oil in

From a paper presented at the annual meeting of the American Society of Lubricating Engineers at Chicago on April 12, 1949.

order to maintain a viscosity that will give better capillarity and free feeding of the oil to the bearing. It is the judgment of the writer that this trend should be developed, both for passenger- and freight-car lubrication.

Roller Bearings

The lubrication of roller bearings is a fairly simple matter. Any good lubricating oil that is clean and does not become solid at low temperatures will readily lubricate roller bearings if oil is kept in the boxes. This requires frequent inspection and servicing, as roller-bearing boxes have not yet been developed that do not permit the loss of some oil through the space in the back of the bearing. The most common practice is to use a fair quality of oil with a reasonably low pour point which has a viscosity at 210 deg. F. of 65 to 70 sec.* Some recommended an oil having a viscosity as low as 50 sec. at 210 deg. F., but this is likely to result in a greater loss of oil and is not generally recommended. Some are still using a much heavier oil having a viscosity as high as 140 sec., but most oils of this viscosity will have a high pour point at 25 deg. to 30 deg. F. If a car with this oil is standing in sub-zero temperatures, the oil will not flow behind the rollers and this is likely to increase the wear by lack of lubrication until the box reaches a temperature above the pour point of the oil. Therefore, the most desirable oil appears to be the one having a viscosity of 60 to 70 sec. at 210 deg. F. with a zero pour point.

The use of grease in roller bearings on cars is now being given serious consideration. The only advantage offered by the grease is reduction in the amount of servicing required. Opposed to this is the high price of grease compared to oil. Oil being a common standard lubricant and fairly uniform in physical properties, it is much simpler to use it in cars in interchange than to use grease. Either furnishes good lubrication and there is less loss of lubricant from grease-lubricated bearings than where oil is used. It, therefore, seems that the choice between the two lubricants is purely a matter of economy. This has not yet been fully determined.

Where cars are not subject to interchange, inspection and control of the lubrication is not difficult and a period between inspection and the addition of lubricant can be quite closely fixed with safety. For economy with grease lubrication, it is desirable to have roller-bearing boxes so designed that the volume of grease required is much less than is commonly used in the oil-lubricated roller bearings. Practically all of the roller-bearing boxes in passenger equipment have been designed for oil and it is, therefore, probable that the use of grease in such bearings would be less economical than with oil.

The design of roller bearings now in use in freight service is such that grease may prove economical. Service tests are now being run to determine the relative economy. The subject of interchange of freight cars with grease lubrication is now being considered. Manufacturers of roller bearings are not all agreed on the correct physical properties for grease lubrication. If roller-bearing boxes are constructed with a minimum of clearance in the back of the box, there should be no difficulty in selecting a grease that will be sufficiently light to flow into the races and not be heavy enough to result in channeling when cold, and at the same time avoid loss of lubricant by throwing the grease out of the box. The Union Pacific has 500 roller-bearing live-stock cars with grease running very successfully.

It is much more difficult to make a specification or fix a standard for roller-bearing grease than for oil and, because of the longer time between servicing, there may be some danger of freight-car bearings losing lubrication to the point of heating. This subject is still an open one and definite conclusions cannot be drawn until more extensive studies have been completed.

Steam Locomotives

It is generally accepted that valve oil should be the highest quality of high-temperature paraffin base oil, most of which is made from Pennsylvania stock. Compounded oil containing acidless tallow or prime lard oil has been in general use. However, a number of roads are now operating with a straight mineral oil. The only object in using compound is to improve the adhesion of the oil to wet, polished-steel surfaces. With superheated engines, this condition occurs after the engine has been standing, permitting condensation, or in case of water carry-over. With the extremely high temperature of the steam entering the valves and cylinders (750 deg. and higher), the organic fat may be decomposed and may result in more insoluble deposits on valve and cylinder rings and grooves than would occur with straight mineral oil. This condition is likely to more than offset the advantage of the compounded oil for lubrication of wet surfaces.

A number of roads are now using a straight mineral oil successfully and, so far as known, no accurate figures have been obtained which show more wear on rings and cylinder walls than occurs when using a compounded oil. The accumulation of carbon deposits which result in stuck and broken rings has always been a difficult problem. Cleaning is difficult and expensive and the suggestion has been made that a compound may be used in valve oil similar in character to that added to Diesel engine oils to keep rings and grooves free from carbon. This offers a field of research for the lubrication engineer and the refiners.

The method of lubricating driving journals and rods has not been changed for many years, and the selection of a grease for this type of lubrication depends upon the size of the engine and the character of the service. Therefore, different roads will use greases of different physical properties successfully.

Some work has been done with engines equipped for oil lubrication. Various designs have been brought out for this purpose and it is reported that satisfactory lubrication is being obtained on some roads with oil lubrication, especially on driving journals. This also offers an opportunity for further study, since it is a general principle that best lubrication is obtained whenever the proper quality of oil can be successfully fed to the journal and bearing.

In the lubrication of motion-work parts, it has been the general practice to use a cheap, simply made grease of a consistency that will feed readily to the motion

*Viscosity is stated as the time of flow of a given quantity of the material through a given orifice at a stated temperature.

This new coal-dumping facility built by the Baltimore & Ohio at Howland Hook, Staten Island, will provide an expanded coal delivery for industrial and utility plants along the New York waterfront. Coal coming to New York by rail can be trans-loaded quickly at the facility into barges or small harbor vessels for delivery to waterfront plants. Costing more than $400,000, the machine will be able to handle between one and one and one-half million tons of coal per year

work. This method has been wasteful and the ordinary grease readily runs off the part to be lubricated or is washed off when engines are cleaned. Greases have been developed which have a tackiness sufficient to improve adhesion to the moving part and, in some cases, lead compounds have been added to this type of grease which have improved the lubrication and reduced wear. A great deal of work has been done in the development of new greases with definite improvement and with the possibility of still further advantageous development.

Diesel Engines

The lubrication of Diesel engines is extremely important. Practically all lubricated parts being precision equipment, they must be properly lubricated and the life of the engine is largely dependent upon the quality of lubrication.

The use of high-grade paraffin-base oils without an additive builds carbon deposits rapidly in ring grooves, on valve stems, and cylinder walls, with a result that, with such a lubricant, there will be many stuck and broken rings and excessive cylinder wear and sticking valves. The first Diesel engines used in railroad service were low-speed engines without excessively heavy loads on the cylinders. In such engines a highly refined pure napthenic oil gave good results, kept rings and cylinders clean and rings were free. As speeds were increased and more horsepower per cylinder was developed, it became necessary to have an oil of greater strength, requiring the addition of some high-grade paraffin-base oil. With such an oil, or with pure paraffin-base oil, it is necessary to use additives to protect properly the engine parts. The two principal additives are a detergent or dispersant and an anti-oxidant compound. There is usually a third additive to prevent frothing or foaming of the oil. Such additives keep the carbon in a finely divided state and prevent its building up in ring grooves, on valve stems and pistons, and prevent corrosion due to oxidation of the oil at the high temperatures of the cylinders.

A difference of opinion exists among refiners as to the character of base oil necessary for proper service. Some use oils having a high viscosity index which are essentially pure paraffin-base products; others use mixed base oils having a viscosity index of from 30 to 60. With proper additives and properly refined oils, both types have performed successfully. The experience of the writer has been largely with mixed base oils. Good results have been obtained with oils having a viscosity index of 35 to 45, also with oils having a viscosity index of 55 to 60. Service tests have been made with both types of oils in which no measurable wear has appeared after more than 100,000 mi. of service.

In order to obtain correct lubrication, considerable responsibility rests with the engine builder. It is absolutely necessary that the engine be equipped with filters and that these filters are large enough and so arranged that a fairly large percentage of the oil will pass through the filter in order to keep it clean and avoid scoring of bearings from hard particles embedding themselves in the surface of the anti-friction metal in the bearing. It is equally important that sufficient oil pressure be maintained to circulate the oil thoroughly and avoid excessive temperatures, at the same time having sufficient pressure to force the oil between the bearing and the shaft. In some engines oil pressure has dropped very low when the engine is idling and bearings have shown evidence of being starved for lubrication.

During idling periods, with low oil pressures, there is also a tendency to dilution of the oil, and this may become so thin that it does not have the necessary film strength or lubricating qualities properly to protect the bearing parts. There is no oil of high enough quality to give proper lubrication to a Diesel engine unless the oil is properly filtered and sufficient oil pressure maintained at all times.

There has recently been a great deal of discussion with differences of opinion expressed on the desirability of mixing oils in Diesel power. It is impossible for anyone to say that two oils can or cannot be mixed successfully. Only after long service tests and careful observation can this question be decided. The refiners do not divulge the composition or combinations in the additives used. For this reason, the consumer is necessarily puzzled. We know there is a difference in the additives used by the different refiners. The amount

and character of the additive required has not yet been fully determined. The character of the base oil also affects this selection of additive. One base oil may operate successfully with a certain combination of additives and a definite proportion of these additives put into the oil. A refiner using a base oil of different character may require a larger or smaller percentage of additives and the proportion of detergent and deoxidant may vary. Accordingly, in mixing two or more additive oils, a different result may be obtained from that found when the oils are kept separate. Cases have been reported where mixed additive oils have been used with poorer results than was obtained with any one of the oils used separately. Therefore, it is the opinion of the writer that it is better to keep on the safe side and keep these compounded oils separate.

The Engine Knows What It Wants

Charles F. Kettering has very aptly said that the engine, itself, knows better what it wants than we do. As far as can be seen, the proper oil to use in a Diesel engine is one that keeps the rings free, valve stems and pistons clean, and shows the least wear.

The reclamation of Diesel engine oil is a general practice, but there is considerable difference in the quality of the oil reclaimed by the different processes now in use. If the reclamation process is thorough, the quality of the reclaimed oil should be comparable to the new oil and, in reclaiming additive oils, the additive should be restored by thoroughly mixing the correct proportion with the hot reclaimed oil. This practice has been followed successfully and too much emphasis cannot be laid upon the quality of the oil so produced.

There has recently been some agitation directed toward the writing of a specification for oils for Diesel engine service. This does not appear to be desirable and it is questionable as to whether or not it is possible. No specification should be written without complete knowledge of all of the materials contained in the product specified. If this is done, all initiative of the refiner to produce a better oil than his competitor is destroyed and the placing of responsibility for performance is cancelled. Such a specification would be extremely difficult and laborious to check and assure the consumer that the oil purchased fully meets the specification. For these reasons, it is the opinion of the writer that the development of a specification for Diesel engine oil should be discouraged.

Other Diesel-Locomotive Bearings

There are a number of lubricants used in Diesel locomotives other than that used in the crankcase of the engine. These should be given careful attention. In some cases the engine builder has recommended lubricants for some of the accessories that have not proved entirely satisfactory. An example is the use of Diesel engine oil in air compressors. Engine oil is not an air-compressor oil and the service has shown that a different type oil, which we term "air-compressor oil" and which is approved by the air-compressor companies, has given much better results than engine oil.

Another case is that of the engine governors. The governor on one make of engine may require a good quality of SAE 10 paraffin-base oil. Another governor will not operate satisfactorily with this oil, but requires an SAE 30 of the same quality.

The lubrication of traction-motor roller bearings has been successful with certain types of grease. The same bearing may be successfully lubricated with another grease, but the two cannot be put together in the same bearing and operate successfully because the greases are not miscible. On the other hand, several satisfactory greases have been made that are miscible and give satisfactory results when two or more of the greases are in the same bearing. Other traction motors have now been furnished with bearings built for oil lubrication and operate satisfactorily.

It, therefore, appears that it is necessary for the lubrication engineer to make careful study of the various lubricants and fit them to the particular piece of equipment at hand.

Another point in the Diesel power unit that is deserving of attention is the proper lubrication of driving gears. There is no part in these locomotives that takes a more severe load than the pinion and ring gears that drive the locomotive. The present practice of lubricating driving gears appears to be somewhat crude. In order to make the lubricant adhere, the manufacturer has used a heavy asphaltic product in large proportion with a small amount of real lubricant. When cold, this puts a very heavy drag on the gears. It appears to the writer that research should be conducted toward developing a gear lubricant that will have a higher lubricating value and at the same time stay where it is effective. In this line, some study might be given by the engine builder toward designing a gear case that will better prevent throwing the lubricant out of the enclosure.

Another important point for lubrication is the motor support bearings. These bearings are operated on the principle of the waste-packed bearing, but in order to have the oil reach the journal, it is necessary to use long, high-quality wool yarn which will at all times have good capillarity and maintain a constant flow of oil to the journal. The recently developed felt-pad lubrication on the same principle has also been successful.

It has been generally believed that an ordinary car oil of proper viscosity will satisfactorily fill these requirements. However, it must be admitted that the cleaner and higher the quality of the oil, the better will be the capillarity and the film strength, and it should be reasonable to assume that such an oil will give better lubrication for a longer period than the cheaper oil. The writer experienced some difficulty on certain engines that were in unusually severe service. The application of the best quality of yarn and high-grade oil, such as an oil similar to an SAE 30 motor oil, resulted in notably better operation.

[The discussion which followed the presentation of Dr. Barr's paper indicated lack of agreement on some points, particularly as to the desirability of developing specifications for Diesel engine oil. Diesel lubrication, in general, was pictured as in a state of confusion; engine lubrication has reached the limit of capacity of straight mineral oil; there is need of basic knowledge of what is occurring in Diesel engines, not all of which "speak the same language." Light car oil with additives is already under trial.—EDITOR.]

A. L. Hammell Becomes President Of Railway Express Agency

L. O. Head retires after more than half a century of express service, including nearly 17 years as chief executive of R. E. A.

A. L. Hammell

L. O. Head

L. O. Head, president and director of the Railway Express Agency since 1932, retired on May 2 after more than 50 years of continuous service in the express transportation field, and has been succeeded in both positions by Alfred L. Hammell, whose appointment as R.E.A. executive vice-president, at New York, was reported in *Railway Age* of September 25, 1948.

Born at Milner, Ga., on April 23, 1879, Mr. Head was educated at Central College, Walnut Springs, Tex., and Ouachita College, Arkadelphia, Ark., receiving a B. S. degree from the latter institution in 1898. Following service in the Spanish-American War, he began his express career in the same year as a clerk for Wells Fargo & Co. Express on the Texas Central (now part of the Missouri-Kansas-Texas of Texas) at Dublin, Tex. After serving as agent at Albany, Tex., and as cashier and agent at Stamford, Tex., he was transferred in July, 1900, to Lake Charles, La., as agent. In July, 1903, he became route agent for Wells Fargo at Dallas, Tex., and, four years later, chief route agent at Houston. His service in that position was followed by periods of two years each as general agent at New Orleans, La., operating superintendent at Little Rock, Ark., and efficiency superintendent at Houston, and by 11 months as operating general superintendent at Los Angeles, Cal.

On April 1, 1916, Mr. Head was appointed assistant to the operating vice-president and general manager of the Western department, at San Francisco, Cal. He remained in that post for the next 11 years, which included the period of federal railroad control during World War I and the formation, on July 1, 1918, of the American Railway Express Company, by consolidation of Wells Fargo and other express companies at the insistence of the federal railroad administration. On January 1, 1927, he became vice-president of the Western departments, still at San Francisco, continuing in the same capacity after the express business was transferred to railroad ownership by incorporation of the present Railway Express Agency on March 1, 1929.

For six months in 1932 Mr. Head was vice-president of the R. E. A. at Chicago, in charge of the Central operating department, and on September 1 of that year was elected president, with headquarters at New York.

Mr. Hammell was born at Eldorado, Cal., on August 7, 1889, and received his education in the Oakland, Cal., high school and at Heald's Business College in Oakland. Like Mr. Head, he began his express career with Wells Fargo, starting in October, 1909, at San Francisco and serving successively until 1914 as express handler, clerk, cashier, chief clerk, commercial agent, vehicle inspector and delivery supervisor.

In 1915 he was agent for Wells Fargo at the Panama Pacific International Exposition held at San Francisco, in that year, with supervision over the company's own exhibit building and express service to and from the exposition. After the exposition ended, Mr. Hammell spent two years as route agent, first at Eugene, Ore., and then at Portland, and one year as general agent at Salt Lake City, Utah.

Upon the formation of the American Railway Express Company in 1918, Mr. Hammell was sent to Denver, Colo., as assistant general agent, and a year later was assigned to El Paso, Tex., as general agent. In October, 1919, he returned to San Francisco to become chief clerk on the vice-president's staff, and, after four years of varied experience in departmental work at that point, went to Great Falls, Mont., as operating superintendent. Within a year he was again recalled to San Francisco, this time as superintendent of traffic and transportation, which post he held for nine years, until March 1, 1929, with American Railway Express, and from then until March 1, 1934, with the Railway Express Agency.

On the latter date, Mr. Hammell was transferred to Boston, Mass., as general manager of R. E. A.'s New England department, but in 1937 returned to San Francisco as operating vice-president of its Western departments. In August, 1940, he was appointed operating vice-president of the Agency's Central region, with headquarters at Chicago, where he remained until October 1, 1948, when he was appointed to the then newly created position of executive vice-president, with headquarters at New York.

GENERAL NEWS

Reparations Claims Opposed by R. L. E. A.

Labor-leader group would intervene on side of roads

Asserting that more than a million railroad employees who are members of its constituent organizations have a "vital interest" in the maintenance of a "financially sound and solvent railroad industry," the Railway Labor Executives' Association has asked the Interstate Commerce Commission for leave to intervene in the so-called government reparations cases. These are the 17 pending proceedings wherein the federal government is seeking large reparation awards on the basis of allegations that it was overcharged by the railroads on its shipments of various commodities during World War II.

The R.L.E.A. petition,, which was like the one filed recently by the Brotherhood of Locomotive Engineers (see *Railway Age* of April 2, page 48), was signed by the association's secretary, A. E. Lyon. "If the railroads are required to pay to the government the amount involved in these reparation cases," it said, "the result may be a substantial reduction in forces, the curtailment of services, and a general retrenchment in all branches of railroad service, all of which would cause widespread suffering and privation among the railroad workers represented by this petitioner as well as seriously jeopardizing the preservation of a safe, adequate, efficient, and economic transportation system."

The petition went on to say that improvements in railroad plant and facilities "will be substantially retarded and delayed" if the government is awarded the reparations it is claiming. That was identified as another matter in which employees for whom R.L.E.A. speaks are "vitally" interested, because of their stake in the adoption by the railroads of improvements in safety standards and devices.

"The roadbeds, tracks, and equipment of the railroads," the petition continued, "suffered severe deterioration during the war years and their present condition could not cope with any national emergency similar to that experienced during the last war. If the railroad industry is required to use its available financial resources for payment of reparation claims as those asserted in this case, it would be impossible to carry out the rehabilitation program which is essential to the national defense and which would be imperative in the event of another national emergency."

R.L.E.A. was further concerned because payment of the reparations claims might require rate increases. Such increases, it said, "would in turn cause a diversion of railroad business to competing forms of transportation with resulting loss of employment to the members of the organizations affiliated with this petitioner and serious danger to the preservation of fair wages and equitable working conditions."

3 Months Net Income Totaled $59,000,000

Net railway operating income was $128,415,886

Class I railroads in the first three months of this year had an estimated net income, after interest and rentals, of $59,000,000, as compared with $75,000,000 in the corresponding period of 1948, according to the Bureau of Railway Economics of the Association of American Railroads. The three-months' net railway operating income, before interest and rentals, was $128,415,886, as compared with $142,646,580.

Estimated results for March showed a net income of $41,900,000, as compared with $36,600,000 for March, 1948, while the net railway operating income for the 1949 month was $65,417,192, as compared with $60,724,331 for March, 1948. In the 12 months ended with March, the rate of return averaged 4.32 per cent, as compared with 3.26 per cent for the 12 months ended with March, 1948.

Gross in the first three months amounted to $2,145,493,768 compared with $2,243,241,537 in the same period of 1948, or a decrease of 4.4 per cent. Operating expenses amounted to $1,771,980,049 compared with $1,820,970,544, a decrease of 2.7 per cent. Thirty-eight Class I roads failed to earn interest and rentals in the three months, of which 15 were in the Eastern district, 3 in the Southern region and 20 in the Western district.

Class I roads in the Eastern district in the three months had an estimated net income of $30,000,000 compared with a net income of $17,000,000 in the same period of 1948. For March, their estimated net income was $9,600,000 compared with $9,600,000 in March, 1948.

Those same roads in the three months had a net railway operating income of $70,125,459 compared with $48,879,003 in the same period of 1948. Their net railway operating income in March amounted to $23,596,457 compared with $22,698,095 in March, 1948.

Gross in the Eastern district in the three months totaled $991,104,413 a decrease of 3.3 per cent compared with the same period of 1948, while operating expenses totaled $811,100,413, a decrease of 5.6 per cent.

Class I roads in the Southern region in the three months had an estimated net income of $18,000,000 compared with a net income of $21,000,000 in the same period of 1948. For March, they had an estimated net income of $7,500,000 compared with $8,400,000 in March, 1948.

Those same roads in the three months had a net railway operating income of $29,870,767 compared with $33,892,793 in the same period of 1948. Their net railway operating income in March amounted to $11,632,760 compared with $12,729,958 in March, 1948.

CLASS I RAILROADS — UNITED STATES

	1949	1948
Month of March		
Total operating revenues	$739,058,115	$776,616,109
Total operating expenses	587,933,263	618,759,345
Operating ratio—per cent	79.55	79.67
Taxes	72,339,986	82,163,688
Net railway operating income (Earnings before charges)	65,417,192	60,724,331
Net income, after charges (estimated)	41,900,000	36,600,000
Three Months Ended March 31, 1949		
Total operating revenues	$2,145,493,768	$2,243,241,537
Total operating expenses	1,771,980,049	1,820,970,544
Operating ratio—per cent	82.59	81.18
Taxes	205,435,448	237,223,188
Net railway operating income (Earnings before charges)	128,415,886	142,646,580
Net income, after charges (estimated)	59,000,000	75,000,000

Gross in the Southern region in the three months totaled $315,309,588, a decrease of 5.2 per cent compared with the same period of 1948, while operating expenses totaled $249,458,304, a decrease of 3.0 per cent.

Class I roads in the Western district in the three months had an estimated net income of $11,000,000 compared with $37,000,000 in the same period of 1948. For March, they had an estimated net income of $24,800,000 compared with $18,600,000 in March, 1948.

Those same roads in the three months had a net railway operating income of $28,419,660 compared with $59,874,784 in the same period of 1948. Their net

railway operating income in March amounted to $30,187,975 compared with $25,296,278 in March, 1948.

Gross in the Western district in the three months totaled $839,079,767, a decrease of 5.2 per cent compared with the same period of 1948, while operating expenses totaled $711,421,332, an increase of 1.0 per cent.

Railroad Radio Will Have Fewer Frequencies

F.C.C. issues report making new allocations effective July 1

Railroad radio services will lose 19 frequencies in the Chicago area and 21 in other areas as a result of a Federal Communications Commission report and order which makes over-all revisions in the commission's rules governing, and the frequencies employed by, the so-called specialized non-broadcast radio services. The order, issued May 3 and effective July 1, overrides railroad objections to the loss of the above frequencies, which are in the 152-162 Mc. band, but it does give the railroads eight "developmental" frequencies in the 450-460 Mc. band, on a shared basis with urban transit services.

The railroads now have allocated to them 60 frequencies in the 152-162 Mc. band. Under the net set-up, they will have for use in the Chicago area 41 frequencies, 39 of which will also be available for use in other areas. In these other areas, the 39 frequencies will also be made available to Public Safety Radio Services, on a secondary basis, when such use will cause no interference to railroad operations.

The commission's report was based on a proposed revision of the regulations and allocations, which was issued about a year ago. Railroad objections to the proposed revision as it affected them were reported in the *Railway Age* of July 24, 1948, page 103, October 9, 1948, page 71, and October 16, 1948 page 81. The present report pointed up the commission's general problem of meeting the demand for frequencies and indicated that the cut was applied to the railroads because of their failure to show, by the trend of installations, that they required the 60 frequencies.

"When the original allocation was made to the railroads in 1945," the report said, "the Association [of American Railroads] organized a committee and drafted a plan to be followed in making frequency assignments to the various roads. This plan was based on Chicago as the key area and was discussed at the oral argument in detail by a communications engineer for the association. This engineer stated that, while there are a great many areas in which the commission's proposal of 41 frequencies would provide sufficient channels, nevertheless, allocations are ultimately fixed by the situation in Chicago. This contention is not disputed, but the commission is not convinced that 60 frequencies are required in Chicago.

"The original allocation was predicated upon the necessity of exclusive channels for main-line end-to-end and wayside point-to-train communications. With its high safety factor, interference-free communications on the main line were believed to be essential. Therefore, since there are 22 major railroads and 10 local roads operating in the Chicago area, 60 frequencies were deemed necessary. An examination of the situation in Chicago as it exists today reveals that, of the 32 roads operating in that area, only 13 are presently using radio. Of these 13, six installations are for yard and terminal operations exclusively, three for main line, and four for both types. Thus, although the allocation of 60 frequencies had been predicated upon the need of providing 30 interference-free channels in the Chicago area for main-line communications, we find that only seven railroads in that area are so using radio."

The new set-up will also involve a change in the commission's classification of the Railroad Radio Service. The service is now in the "Experimental General Mobile" group, which will be supplanted by three new classes of mobile services—Land Transportation Radio Services, Domestic Public Mobile Radio Service, and Industrial Radio Service. The Railroad Radio Service will be part of the first of these classes.

Meanwhile, the Maritime Mobile Service will be assigned 12 frequencies in the 152-162 Mc. band, with 100 kc. separation between adjacent frequencies. This service now has nine frequencies, with 60 kc. separation between adjacent frequencies. Highway Truck Radio Service, which "is designed for use by persons or organizations regularly engaged in operating trucks on routes outside of metropolitan areas only," will get seven frequencies in the 30-40 Mc. band; Intercity Bus Radio Service will get 16 frequencies in the 30-44 Mc. band. The latter will accommodate those "regularly engaged in offering the public a scheduled common carrier land transportation service over public highways, primarily between established city terminals."

The commission's general discussion of the revision recalled that the present allocations were made to "encourage experimentation," but it pointed out that the May 25, 1945, report which made them also "cautioned all applicants that the grant of an experimental authorization would not, in any way, constitute any assurance that the licensee would be authorized to operate a station in any services that might be finally established and that expenditures undertaken on account of such experimentation were incurred at the risk that frequencies would be shifted or would not necessarily be made available on a regular basis for the type of service authorized."

Engineers Union Rejects Diesel Board Report

The Brotherhood of Locomotive Engineers announced on April 28 that its general chairman had voted unanimously to reject the April 11 report of the emergency board which heard the union's demands for a second engineer on multiple-unit Diesel locomotives. The board had reported to the President that the claims of the B.L.E. were "without merit" (see *Railway Age* of April 16, page 780). All "cooling off" provisions of the Railway Labor Act have been exhausted, and while the union is free to call a strike, on or after May 11, on 15 Western railroads on which strike votes have been previously taken, the brotherhood has not indicated what action it will take beyond notification that the report of the board is "not acceptable."

Puts More Curbs On Railroad Trucks

I.C.C. restricts Rock Island; denies it has "new policy"

Interstate Commerce Commission decisions which have made more restrictive the conditions designed to insure that trucking operations of railroads and railroad affiliates remain "auxiliary to, or supplemental of" rail service have not invoked a "new policy," the commission has insisted in a report on further hearing in cases involving operations of the Rock Island Motor Transit Company, subsidiary of the Chicago, Rock Island & Pacific. The decision, which will have the effect of driving Transit out of the so-called all-motor business on the routes involved, was accompanied by a dissent wherein three commissioners said the majority's action was taken "in order to execute a 'new policy,'" and was thus "not distinguishable" from the commission's operating certificate of Seatrain Lines—an action that was condemned by the Supreme Court.

The dissent, written by Commissioner Miller, was subscribed to by Chairman Mahaffie and Commissioner Mitchell. The further hearing, Mr. Miller said, afforded "no basis" for the action taken by the majority. "Although," he continued, "our authority to impose conditions to approval of transactions under section 5 is broad, the action of the majority is not a prescription of conditions to approval to these two section 5 matters; it is a direct revocation of a portion of the certificates of the Rock Island Motor Transit Company in a manner other than as

authorized in section 212." The dissenting opinion then closed with its reference to the Seatrain case which was decided by the Supreme Court in January, 1947 (see *Railway Age* of January 11, 1947, page 154).

Commission "Spells Out" Its "Intentions"

The majority report was based generally on the proposition that the additional restrictions now being prescribed amount to a spelling-out of what was intended by the commission's Divisions 4 and 5 when they authorized Transit to acquire the routes involved. As indicated above, the acquisitions were section 5 transactions, i.e., the routes were acquired by the railroad subsidiary from independent operators which, of course, conducted all-motor operations.

The title case was MC-445 in which the first report, issued in 1938 by Division 5, authorized Transit to acquire, from the White Line Motor Freight Company, operating rights on a route between Silvis, Ill., and Omaha, Neb. The certificate issued did not contain any restriction on the kind of service authorized, but did specifically provide that it was subject to the condition or reserved right of the commission later to impose such restrictions as might be found necessary to insure that the service should be limited to that which is auxiliary to or supplemental of train service, and should not unduly restrain competition.

The other case was No. MC-F-2327 in which the first report, issued by Division 4 in November, 1944, authorized Transit to purchase, from J. H. and D. H. Frederickson, operating rights on a route between Atlantic, Iowa, and Omaha. Here no restriction or condition was imposed, not even that reserving jurisdiction to impose restrictions in the future. The transaction was consummated in January, 1945, but the commission issued no certificate covering the rights authorized to be purchased. Instead, it issued a February 5, 1945, order reopening the case and No. MC-F-445 for reconsideration on the matter of imposing conditions. Out of such reconsideration came a report, now affirmed by the present report, in which the commission imposed on the two operations all of the usual conditions, including the co-called key-point restriction which prohibits the transportation of freight by truck between specified key points. In doing so, it relied for authority on the reservation of jurisdiction in MC-F-445, and, in No. MC-F-2327, on the proposition that it retained jurisdiction because no certificate had been issued.

Transit then filed a petition for reconsideration, oral argument, and withdrawal of this report on reconsideration. The petition said that the petitioner was entering a special appearance for the sole purpose of filing the petition, and was "specifically preserving the point of law that the commission is without jurisdiction to change or modify the orders authorizing acquisition of petitioner's certificates." Although the petition did not seek it, the commission then reopened the proceedings for the further hearing out of which the report under discussion has come.

The further hearing was to determine what conditions, if any, appeared necessary to limit the service of Transit. Transit entered an appearance "solely to contest our jurisdiction in assigning the proceeding for further hearing for the purpose indicated," the commission said, adding that the railroad affiliate "presented no witnesses and offered no evidence to show factually a lack of necessity or justification for the imposition of the conditions prescribed . . . or for other conditions in lieu thereof." After dismissing Transit contentions as to which it found no discussion required, the commission proceeded to separate discussions of the two cases, dealing first with MC-F-445.

Transit Company's Case

Transit's contentions in that case were restated and summarized by the commission as follows: (1) That Division 5's approval of the purchase of the White Lines' operating rights was not coupled with any requirement or clearly indicated intention that the future operations should exclude all-motor operations not auxiliary to or supplemental of rail service; (2) that Transit was misled into consummating a transaction and making expenditures it would not otherwise have made to such an extent that it should not in fairness now be required to observe limitations it did not understand or intend to accept; (3) that the commission's concept of what constitutes "auxiliary and supplemental" service has undergone a change since the issuance of the original report in this case; (4) that the commission's original concept contemplated a geographical limitation only; (5) that by a "tortured construction" of these words as originally used the commission is now seeking to hold Transit to standards or practices not originally stated or clearly indicated, contrary to the equities of the situation; (6) that any attempt to impose the restrictions set forth in the prior report on reconsideration (construing them as the commission does) would be in excess of commission authority because it would amount to a partial revocation of Transit's certificate in disregard of section 212 of the act; and (7) that, if otherwise within the commission's power, the imposition of such restrictions now would be arbitrary, unsupported by any evidence, and discriminatory against motor carrier affiliates of the railroads.

Disposing of these contentions, the commission noted, as to the "intent" of Division 5's report, that that report had much to say about the service it was authorizing being a coordinated rail-truck service; and that it cited the commission's decision in *Pennsylvania Truck Lines, Inc.,—Control—Barger M. Frt.,*

THE REAL REASON FOR CONCERN

The railroads are the only transportation agency in this country offering to the public a complete transportation market. They transport persons, mail, express, and baggage, as well as freight. They accept daily every item of freight traffic without discrimination as to the traffic or shippers. They transport to destination all traffic entrusted them with reasonable dispatch and on equal terms to all. There is no secret about their rates, which are published and open to examination by anyone who wishes to do so. Their services are constant and continuous. They are privately operated and under strict government control. They pay their way, and they receive no subsidy in any form whatsoever. In other words, the railroads observe the principles which are so frequently referred to as the American way of life. On the other hand, most other agencies of transportation pick and choose their traffic; their services are limited either by the size of their vehicles, the character of their service, or the desires of their operators; many of them have no published rates, and one shipper frequently pays more than another on the same day for like service; and most of them, in fact all that I know of except the pipe lines, obtain subsidies from the government in one form or another. The transportation market they offer is extremely limited or restricted. There is no substitute for rail transportation. It must continue to be the center of our national system of transportation.

My conclusion is that what we need to be concerned about is not whether the railroads are economizing or modernizing or experimenting or pricing themselves out of the market. What we need to be concerned about is whether the public desires the good rail transportation system which it has helped to build over the years, which is conducted according to good American principles, and which affords fair and equal treatment to all. Also whether the American people will support such a rail transportation system with their traffic, patiently cooperating as they have in the past in correcting any inequalities in specific rates whether such rates be too high or too low. I think I know the answer to that question. I believe, in fact I am confident, that shippers desire a sound transportation system which includes not only the railroads but other forms of transportation and will willingly pay what it will cost under good management and sound public policy to provide that kind of a system of transportation. Certainly the attainment of that end is as vital to the shippers as to the carriers.

—From an address by J. L. Sheppard, assistant vice-president, traffic, Illinois Central, to the Norfolk-Portsmouth, Va., Traffic Club, April 21.

1 M.C.C. 101, and 5 M.C.C. 9 and 49, as having "in general indicated the scope of approved and disapproved operations." The Barker case was the first important proceeding wherein the commission was called upon to interpret those provisions of the Interstate Commerce Act which require that railroads or railroad affiliates, seeking to acquire trucking rights, must make a special showing to the effect that the proposed acquisitions will enable the railroad to "use service by motor vehicle to public advantage in its operations and will not unduly restrain competition."

Noting that the original report in the Barker case, by Division 5, was rendered in October, 1936, about 17 months before the original report on Transit's application in MC-F-445, the commission proceeded to quote at length from the Berger case report. The quotations pointed up statements which recognized the potentialities of the motor vehicle as "a very valuable auxiliary or adjunct of railroad service," but which also said the division was "not convinced that the way to maintain for the future healthful competition between rail and truck service is to give the railroads free opportunity to go into the kind of truck service which is competitive with, rather than auxiliary to, their rail operations."

"Approved" and "Non-Approved" Operations

In a supplemental Barker case report of March 6, 1947, the division restated the intent of the original report; and the present report's quotations from that supplemental report included the following: "Approved operations are those which are auxiliary or supplementary to train service. . . .non-approved operations are those which compete with the railroad itself, those which compete with an established motor carrier, or which invade to a substantial degree a territory already adequately served by another rail carrier. Approved operations are best illustrated by the substitution of trucks for peddler or way-freight service in what is commonly called 'station-to-station' service."

From the foregoing, the commission concluded that Transit was authorized to acquire the White Lines' rights "only so that it might perform in the future operations similar in character to those approved in the Barker case." In the light of such circumstances, the report added, "it is impossible to accept the premise that Transit was misled." Transit's claimed interpretation, the report also said at this point, "would attribute to this commission the rendering of little more than lip service to the Congressional intent that we regulate all modes of transportation impartially so as to foster, promote, and preserve the inherent advantages of each from the suppression or strangulation which might follow if control thereof were allowed to fall into the hands of a competing transportation agency." The commission conceded that it has dealt with the "auxiliary and supplemental" matter in decisions subsequent to the Barker ruling, but insisted that those decisions did not indicate a new commission concept of the phrase's meaning, but merely "spelled out" the original concept in "greater detail."

(Continued on page 76)

Diesel Locomotion School Puts "Locomotive In Classroom"

A training school in Diesel locomotive operation that brings the locomotive into the classroom, rather than the class to the locomotive, is now being used to train steam railroad personnel by the Baldwin Locomotive Works.

A 6,000-hp. Baldwin Diesel-electric road locomotive and a 1,000-hp. Baldwin switcher are brought before the class by means of life-size operating panel boards, which duplicate both the appearance and operation of panel boards in the actual locomotives. Complete sequences are run on these panels. When the "locomotive" is in operation, lights mounted on relays focus attention on the steps of the sequence as they take place. Mechanical linkage causes the governor and the fuel injection pump, both cutaway models, to function as they would on an actual locomotive. Overspeed control, fan and shutter control, emergency shutdown equipment, and pressure and temperature gauges perform in the same way. A life-size, two-cylinder cutaway model of an eight-cylinder Baldwin Diesel engine is now completed and about to be added to the panels. A supercharger cutaway is mounted on the engine and performs as in normal operation.

Classes are taught by James Barnhill and Richard Campbell, Baldwin Diesel field-service engineers. Robert M. Harrison is director of the school. The 20-hour course is limited to 20 members and to one two-hour session per day. Those attending include enginemen, firemen, hostlers, road foremen, special-duty men and any others whose training will help reduce delays in changeover from steam to Diesel operation.

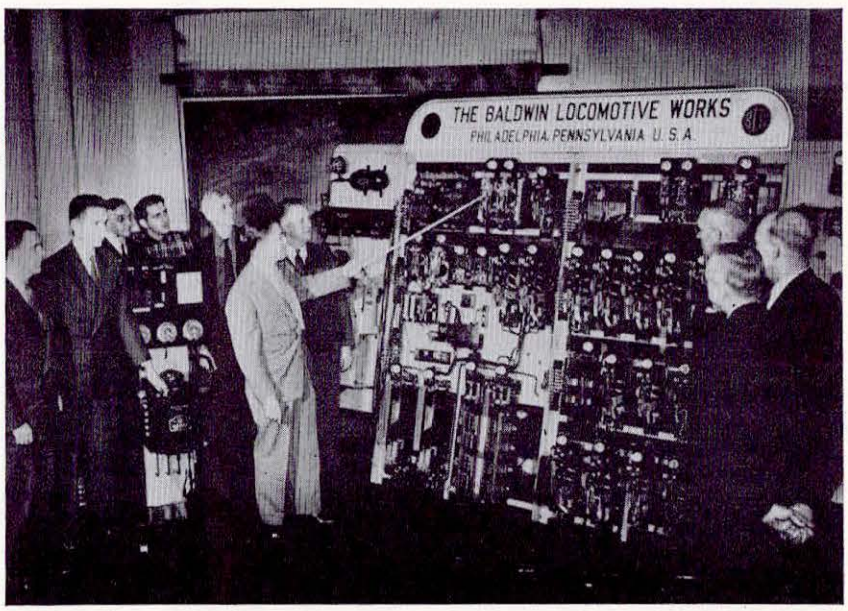
Emphasis is on practical work rather than on theory. In a final examination, each member of the class must reduce faults set up on the panel. In the final session the contents of the course are given out in written form. The course comprises identification of equipment; inspection before starting; starting and after starting; operation of the locomotive; routine road inspection; emergency devices, including fire fighting, and trouble shooting on operating difficulties. Films are shown on each of these six phases.

First started in early 1948, the school has held extended courses for more than 3,000 selected students in Harrisburg, Pa., Altoona and Pittsburgh, Baltimore, Md., and Grand Rapids, Mich. When it has completed its rounds, the equipment will return to the Baldwin works at Eddystone, Pa., to become a permanent Diesel training school.

Erie to Raise Commuter Fares; Defer L. V., Lackawanna Raises

The Erie has filed with the Interstate Commerce Commission and the New Jersey Board of Public Utility Commissioners new tariffs calling for increases in commutation fares averaging approximately 18 per cent. The proposed fares, to be effective June 1, would apply to all monthly unrestricted and restricted Monday-through-Friday tickets as well as 14-trip weekly tickets.

The I.C.C., meanwhile, has suspended the Delaware, Lackawanna & Western's proposed commuter-fare increases averaging 14 per cent which were to have become effective May 1, as well as the



The Baldwin Locomotive Works has used this traveling life-size panel board to train more than 3,000 steam railroad personnel in four states in operation of Diesel locomotives. All parts function exactly as they would in the cab of an actual locomotive

Lehigh Valley's proposed increases in commutation rates averaging about 23 per cent which were scheduled to become effective on April 29. Pending investigation by the commission of the proposed increases, the roads were ordered to retain the present fares.

Freight Car Loadings

Loadings of revenue freight in the week ended April 30 totaled 785,444 cars, the Association of American Railroads announced on May 5. This was in increase of 16,108 cars, or 2.1 per cent, over the preceding week, a decrease of 105,671 cars, or 11.9 per cent, under the corresponding week last year, and a drop of 97,130 cars, or 11.0 per cent, under the equivalent 1947 week.

Loadings of revenue freight for the week ended April 23 totaled 769,336 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

Revenue Freight Car Loadings
For the week ended Saturday, April 23

District	1949	1948	1947
Eastern	139,176	156,014	165,980
Allegheny	166,238	177,360	190,958
Pocahontas	65,076	61,834	74,450
Southern	119,872	141,679	140,658
Northwestern	114,728	125,806	127,976
Central Western	109,038	120,095	128,058
Southwestern	55,208	69,138	65,632
Total Western Districts	278,974	315,039	321,666
Total All Roads	769,336	851,926	893,712
Commodities:			
Grain and grain products	43,630	38,769	47,628
Livestock	10,059	15,989	15,678
Coal	158,038	176,601	184,159
Coke	14,559	10,690	14,286
Forest products	37,955	44,661	47,563
Ore	69,596	76,600	68,744
Merchandise l.c.l.	93,094	111,201	125,838
Miscellaneous	342,405	377,415	389,816
April 23	769,336	851,926	893,712
April 16	765,890	784,611	865,844
April 9	757,784	682,934	757,839
April 2	725,623	660,631	715,159
March 26	596,329	663,663	829,392
Cumulative total 16 weeks	11,248,274	12,145,083	13,062,859

In Canada.—Carloadings for the week ended April 23 totaled 73,840 cars, compared with 64,776 cars for the previous week, and 74,677 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
April 23, 1949	73,840	31,031
April 24, 1948	74,677	35,554
Cumulative totals for Canada:		
April 23, 1949	1,154,809	509,357
April 24, 1948	1,177,058	582,245

N.Y.O. & W. Service Resumed

Train service on the New York, Ontario & Western, which had been stopped by a strike of the railroad's operating employees at 6 a.m. on April 18, was resumed at 4 p.m. on April 29, following a four-point agreement between the trustees and representatives of the four operating brotherhoods. The agreement was reached at conferences between representatives of the management, the unions and the National Mediation Board after the trustees, on April 27, had asked the federal district court for the southern district of New York for permission to apply to the Interstate Commerce Commission for authority to abandon the entire N. Y. O. & W. system. (See *Railway Age* of April 23, page 50.)

The four points in the strike-ending agreement were as follows:

1. The trustees will seek a delay of at least six months in their application for court authority to apply for abandonment.

2. The trustees will also apply for court authority to refinance equipment trust certificates outstanding in connection with recent purchases of Diesel-electric locomotives.

3. The four operating organizations — Brotherhood of Locomotive Engineers, Brotherhood of Locomotive Firemen & Enginemen, Order of Railway Conductors and Brotherhood of Railroad Trainmen — whose members were involved in the strike will authorize those members to return to work.

The employees returned to work without receiving the 10-cents-per-hour wage increase, retroactive to October 1, 1948, which was granted to railroad operating employees generally last fall, but which the N. Y. O. & W., in bankruptcy since 1937, has been unable to pay, and which was the immediate stated cause of the strike.

4. The federal government, through the N. M. B., will appoint "a wholly disinterested person" to make a complete survey of the property, equipment and operations of the railroad, and report to the district court. This appointee is to be compensated for his services by the government, but the trustees have agreed to pay up to $1,000, and the four brotherhoods together have agreed to pay up to an additional $1,000, toward any expenses incurred in the survey over and above government per diem expense allowances.

No Gain in Storing Locomotives For War, Says Alco President

Contending that "Not a single thing is to be gained by having even one steam locomotive placed in white lead," Robert B. McColl, president of the American Locomotive Company, expressed himself as seeing no value in the proposal of J. Monroe Johnson, director of the Office of Defense Transportation (see *Railway Age* of April 2, page 49) that the government should acquire, at scrap value, and store steam locomotives being retired by the railroads. He told Chicago newspaper men at an interview on April 28 that he foresaw complete replacement—in from five to ten years—of the existing 35,000 steam units on the American railroads by some 20,000 Diesels.

In response to questions regarding the practicability of buying Diesels to replace steam locomotives now handling assignments where only poor utilization or stand-by status are possible, Mr. McColl said he believed the savings from complete dismantling of steam locomotive servicing facilities more than offset any possible higher investment in Diesel equipment. "We don't know of a single instance where a Diesel installation did not pay for itself within four years," he said.

On the subject of the gas turbine locomotive, Mr. McColl expressed the opinion that it was "possible" that it might some day prove superior to the Diesel but he was not, as yet, "hopeful." His company, he said, is currently carrying on experiments with coalburning turbine locomotives at its Dunkirk, N. Y., plant in conjunction with the General Electric Company. He said that if the turbine locomotive ever proved superior to the Diesel, American would probably build its own turbines to G. E. design.

As for the export market for steam locomotives, Mr. McColl said that the American and Canadian builders are being underbid by foreign manufacturers who, in many cases, are receiving the benefits of Marshall Plan aid. He pointed out that, among others, German, French and Austrian manufacturers are currently underbidding the Americans and English for export steam power, and said he had heard that, recently, the Japanese quoted $50,000 for a steam locomotive for export, compared with $90,000 quoted by American and Canadian builders.

C. & O. Issues Special Blue Timetable for Mainline Trains

The Chesapeake & Ohio is issuing a simplified timetable for mainline trains in addition to a new edition of its regular timetable. Printed in blue to distinguish it from the regular yellow-covered C. & O. timetable, which lists all the road's schedules, the mainline blue book indicates through schedules from Chicago, Toledo, Ohio, Cincinnati, Detroit, Mich., and Louisville, Ky. to eastern points including Washington, D. C., Richmond, Va., Newport News and Norfolk. Connections for New York, St. Louis, Mo., and other cities via the Pennsylvania and the New York Central System are shown as an integral part of the schedules. Also included in the mainline blue book are the sailings of the C. & O.'s automobile ferries across Lake Michigan, as well as the schedules of the "Pere Marquettes."

Carriers, Operating Unions Settle Vacation Demands

An agreement on paid vacations for operating employees was reached at Chicago on April 29 by the nation's railroads and the five brotherhoods representing those classes of employees. The settlement, which takes effect on July 1, provides for one week's vacation after one year of service and two weeks after five years.

The original demands of the five unions were for vacations ranging from 15 to 30 days, depending on length of service, and

were served on the carriers in November, 1948. Negotiations which culminated with the April 29 agreement were begun at Chicago on March 25. The agreement stipulates that each employee shall be entitled to one week of vacation for each calendar year in which he worked 160 basic days (either miles or hours paid for) after one year of service, and two weeks of vacation for each year after five years of service, provided 800 basic days have been worked in the previous five-year period and 160 basic days in the previous year. The rate of pay for one-week vacations is based on 1/52nd of the previous year's earnings, with a floor of six minimum basic days' pay. The rate for the two-week vacations is based on 1/26th of the previous year's earnings, with a floor of 12 minimum basic days' pay.

Under the terms of an existing agreement which is to be superseded on July 1, operating employees are entitled to one week's vacation for each year in which 160 basic days have been worked, at the rate of pay which the employee would have earned had he worked during that week.

The five unions signatory to the agreement are the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen & Enginemen, the Order of Railway Conductors, the Brotherhood of Railroad Trainmen and the Switchmen's Union of North America. Together, the five organizations represent approximately 300,000 employees.

Freight Operating Statistics—A Correction

In the table of freight operating statistics for January, 1949, which appeared in *Railway Age* of April 30, pages 70 and 71, column 14 on the latter page inadvertently was headed "Coal—lb. per 1,000 g.t.m. including locomotives." These data no longer are included in the report issued by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission and the column should have been headed "Train-miles per train-hour."

O'Neill Heads Mediation Board

Francis A. O'Neill, Jr., was this week designated by the National Mediation Board as its chairman for the period from May 2, 1949, until June 30, 1950. The designation was pursuant to the board's policy of rotating the chairmanship annually among its three members. Mr. O'Neill succeeds Frank F. Douglass, who continues as a member of the board.

B. & O.'s "Capitol Limited" To Be Modernized This Summer

The Baltimore & Ohio expects delivery this summer of sufficient new equipment to modernize completely its premier train, the "Capitol Limited," operating between Washington, D. C., and Chicago.

I. C. DEMONSTRATES HOW TO PLANT A THOUSAND TREES AN HOUR.—The Illinois Central's desire to see idle acres in its territory restored to profitable wood production led the road recently to demonstate one of the newest types of tree-planting machines. Watching the planter in action in 11 Mississippi counties were some 5,000 farmers, landowners, 4-H Club members, agriculturists, foresters, businessmen and others, who saw the machine place 1,000 trees an hour. It is estimated that only 100 trees can be planted in an hour by hand. The 350-lb. planter was developed at Purdue University Experiment Station and has been modified by the railroad. Two additional machines are being constructed at the road's McComb (Miss.) shop, so that tree-planting demonstrations can be held in all forest areas along the line next season

New cars are being constructed in the Chicago shops of the Pullman-Standard Car Manufacturing Company and when they are delivered the train's sleeping cars will feature roomettes, bedrooms, drawing rooms, sections and compartments. Club, lounge and observation cars will be modernized and for the first time since the war the train will present a completely streamlined appearance in the B. & O.'s blue, gray and gold color scheme.

Denies Union Pacific Petition For Relief from Signal Order

Division 3 of the Interstate Commerce Commission has denied a petition wherein the Union Pacific sought authority to continue operating streamlined trains at a speed of 90 m.p.h. over three sections of line without installing automatic train-stop or cab-signal systems, as required by the commission's June 17, 1947, order in the No. 29543 proceeding. The adverse report by Commissioner Patterson found no necessity for the proposed relief, because a maximum speed for 90 m.p.h. "is not necessary to maintain present train schedules," and "if the maximum speed were reduced to less than 80 m.p.h. the schedules would have to be lengthened very little, if any."

The trains involved are the "City of Denver," "City of Los Angeles," and "City of Portland," for which the U.P. wanted to continue the 90 m.p.h. speed limit on lines, respectively, between Julesburg, Colo., and Denver, 197 mi., between Ogden, Utah, and Los Angeles, Calif., 821 mi., and between Pocatello, Idaho, and Huntington, Ore., 336 mi. The Ogden-Los Angeles route includes 101 mi. of Atchison, Topeka & Santa Fe line between Daggett, Calif., and Riverside Junction, over which the U.P. operates under trackage rights.

The U.P. estimated that the cost of installing cab signals on the lines would be $3,193,000. It claimed that climatic conditions were conducive to safe operation, and that the proposed relief was thus justified. Meanwhile, one of its locomotive engineers and a conductor formerly employed by it offered testimony to the effect, as summarized in the commission's report, that "the indications displayed by wayside signals very frequently were not clearly discernible because of rain, snow, dust storms, and blizzards . . . and that in the territory between Summit and Los Angeles smudge pots used in citrus groves create a smog which sticks to the windows, windshields, goggles, and signal lights sufficiently to obscure the view of signals." It was the opinion of these witnesses that "added safety devices such as cab signals, train stop, or train control would be of great benefit, particularly when trains are operated at high speeds."

In reaching its conclusion that denial of the relief will require "very little, if any," lengthening of the trains' schedules, the commission reasoned as follows: "The average scheduled speeds of petitioner's streamliners in miles per hour are 65.3 westbound and 72.1 eastbound,

between Julesburg and Denver, 56 westbound and 55.2 eastbound between Pocatello and Huntington, and 52.9 westbound and 52.6 eastbound between Ogden and Los Angeles . . . Petitioner estimates that if the maximum speed over these lines were reduced from 90 to 75 m.p.h. the schedules would have to be lengthened approximately 30 min. between Julesburg and Denver and between Pocatello and Huntington, and by approximately 1 hr. 30 min. between Ogden and Los Angeles. The time tables of record show, however, that speeds of 80 or more m.p.h. are scheduled between relatively few points . . . The difference in running time between speeds of 30 and 90 m.p.h. is but 8 min. 20 sec. per 100 mi., and between speeds of 75 and 90 m.p.h., 13 min. 20 sec."

The commission, in another report by Commissioner Patterson, recently denied a similar petition which had been filed by the Great Northern (see *Railway Age* of March 19, page 99).

ORGANIZATIONS

F. V. Seibert, industrial commissioner for the Western region of the Canadian National, with headquarters at Winnipeg, Man., was elected president of the **Canadian Institute of Mining and Metallurgy** at the institute's annual meeting in Montreal, Que.

The **Metropolitan Traffic Association of New York** has scheduled two meetings for May, both at the Hotel Statler, New York. The annual Father and Son Night will be held on May 12 and a regular meeting on May 26.

The **New England Railroad Club** has elected the following officers for the club year 1949-50: President, E. E. Oviatt, chief engineer, New York, New Haven & Hartford, New Haven, Conn.; vice-president, Kenneth Cartwright, chief mechanical engineer, N. Y. N. H. & H., New Haven; treasurer, P. S. Chynoweth, Boston, Mass., and secretary, William M. McCombs, Boston.

The **Railfan Society** will hold its next meeting on May 16, at 8 p.m., at 20 West 40th street, New York. Donald M. Smith, vice-president, operations, of Seatrain Lines, Inc., will be the guest speaker.

The **Smoke Prevention Association of America** will hold its forty-second annual conference at Birmingham, Ala., May 23 through May 27. A railroad panel discussion will be held during the afternoon of May 23, on the subject "Locomotive Smoke Abatement Problems." On May 25, Henry May, shop engineer of the Illinois Central, at Chicago, will speak on "Abatement of Smoke and Cinders from Locomotives and at Round House Terminals."

H. W. Ward, president, Illinois Terminal, will be the principal speaker at the next meeting of the **Car Department Association of St. Louis**, to be held on May 24, at 8 p.m., at the Hotel De Soto, St. Louis, Mo. The subject of Mr. Ward's address will be "Building Increased Values in Rail Transportation." This meeting will be designated as "Supply Men's Night" and a dinner will be given in honor of the guest speaker, at 6:40 p.m.

SUPPLY TRADE

Safety Car 1948 Net Was $729,145

Gross income from sales and services of the Safety Car Heating & Lighting Co. and its subsidiaries was $8,212,063 in 1948, compared with $8,646,536 in 1947, according to the firm's annual report. Net income was $729,145, compared with $1,103,399. Operating income for the year, the report said, was adversely affected by increased costs and by reduced sales caused by requests of carbuilders to defer until 1949 the shipment of certain orders originally scheduled for shipment in 1948.

G.E. Plans New Service Shop And Warehouse at Richmond

The General Electric Company will establish a new apparatus service shop and warehouse in Richmond, Va., late this summer. The new shop is being set up to service and repair motors and generators (including those of Diesel-electric locomotives), transformers, control devices, switchgear and other apparatus. The warehousing facilities are intended to reduce the delivery time to customers of many G. E. apparatus products which ordinarily must be ordered from distant factories.

Budd's 1948 Sales and Profits Top 1947 Figures

Sales of the Budd Company in 1948 totaled $219,583,651, compared with $193,500,132 in the preceding year, according to the recently released annual report. Net profit was $9,329,864, compared with $4,086,253. The Red Lion plant in Philadelphia, Pa., in which the firm manufactures railroad cars and brakes, and highway trailers, is booked to capacity well into 1950, the report said. The plant, which for some years had been leased from the government, together with the right to use the railroad siding connecting with the main line of the Reading, recently was purchased for approximately $5,250,000. Although local zoning authorities granted the company's application for permission to continue using the siding, the report added, an appeal from the decision has been taken to the courts by certain residents. If the appeal is successful, Budd's purchase agreement with the government will permit the company to return the plant, recover the purchase price and reinstate the lease as of October 1, 1948. The acquisition has reduced substantially the fixed charges for the plant.

Poor & Co. Backlog Still High

Poor & Co.'s backlog is 87 per cent of the figure a year ago, F. A. Poor, chairman, told the stockholders at the annual meeting in Chicago on April 26. Although there has been a "distinct falling off in new orders and a few cancellations or deferments . . . [the backlog is at] a level that we would have considered very pleasing in any pre-war year," Mr. Poor said. "The company continued during the year, and plans to continue in the future, its program of investigating all possibilities of new acquisitions and new products with an eye to diversification and a broader income base. . . . As to operations during the first quarter of 1949 . . . earnings were substantially greater than in the first quarter of last year."

Leonard Schafer has been promoted to assistant sales manager, Chicago factory territory, of **Hubbard & Co.** Mr. Schafer joined Hubbard 24 years ago and spent

Leonard Schafer

six years in the service department, most of this time as manager. In 1931 he was appointed sales engineer in the Ohio and south-eastern Michigan territory and in 1941 was appointed district manager.

John H. Leslie, vice-president in charge of research and engineering of the **Signode Steel Strapping Company,** Chicago, has been elected president of the firm, succeeding his father, **John W. Leslie,** who has been advanced to chairman of the board. Other personnel changes are: **John S. Gorman,** first vice-president and

director of sales, elected vice-chairman; **Joseph Pois,** treasurer and assistant secretary, elected also vice-president; and **J. M. Moon,** sales manager, elected director of sales, succeeding Mr. Gorman.

The **Whiting Corporation,** Harvey, Ill., has appointed **Harrison Taylor** as a sales engineer in the New York district office, 30 Church street, to succeed **A. R. Binckes,** who has been appointed district sales manager for the Pacific coast area, with headquarters at Los Angeles,

Harrison Taylor

Cal. Mr. Taylor will work under the direction of **D. Polderman, Jr.,** vice-president and export manager, in charge of the New York office. He has been with Whiting since 1938, both as an engineer and estimator in the railroad products department, at Harvey.

Harold G. Garner, paving engineer for the **Portland Cement Association** in the Topeka (Kan.) area, has been appointed district engineer at the association's Omaha (Neb.) office, succeeding the late **C. W. Hiner.**

A. M. Wiggins, formerly executive assistant to the president of the **Westinghouse Air Brake Company,** has been elected vice-president.

The Houde engineering division of the **Houdaille-Hershey Corporation,** Buffalo, N. Y., has opened a Chicago office at 205 W. Wacker drive (Engineers building).

Construction has been completed of a new warehouse and office building at Teterboro, N. J., to extend the service facilities of the **Harnischfeger Corporation** in the eastern United States. **Edward J. Brandt,** eastern service manager, will be in charge.

The **Youngstown Sheet & Tube Co.,** Youngstown, Ohio, has announced the appointments of **L. E. Wallace,** formerly manager of the New York sales office, as general manager of sales at Youngstown, and **J. W. Owings,** formerly manager of oil country tubular sales, as assistant general manager of sales. **M. H. Watkins,** who has been assistant general manager of sales for nearly two years, also will continue to assist Mr. Wallace. **John P. Feagley,** formerly assistant district sales manager at New York, has been appointed New York district sales manager, succeeding Mr. Wallace, and **Philip G. Boyd,** formerly assistant district sales manager at Chicago, has been appointed Chicago district sales manager, succeeding the late **Arthur Purnell,** whose death was reported in the *Railway Age* of April 9, page 71.

J. F. O'Brien has been appointed general sales manager of the **Vulcan Iron Works** of Wilkes-Barre, Pa., and **C. A. Netter** has been appointed general purchasing agent.

The **Cochrane Corporation,** Philadelphia, Pa., has announced the acquisition of substantially all the capital stock of the **Liquid Conditioning Corporation,** Linden, N. J. Liquid Conditioning Corporation will operate as a wholly owned subsidiary of Cochrane and the products of the former, marketed under the trade name "Liquon," will continue to be sold under that name. "Liquon" district sales offices will combine operations with existing Cochrane sales offices and **S. B. Applebaum,** an officer of Liquid Conditioning, will be in charge of the cold-water conditioning activities of both organizations.

Victor Ladetto has been appointed sales manager of the **Continental Screw Company,** New Bedford, Mass., and **Donald H. Sleeper** has been appointed assistant sales manager. Mr. Ladetto, who has

Victor Ladetto

been with Continental Screw for almost 25 years, has been assistant to **David D. Davis,** vice-president, for the past 10 years. Mr. Sleeper has been with the company for almost 14 years.

The **Lake Shore Engineering Company,** Iron Mountain, Mich., has formed a conveyor division to manufacture and sell Tote-All and Coaltoter lightweight, power-driven portable belt conveyors for handling bulk and packaged materials. The **Material Movement Industries, Inc.,** which formerly manufactured these machines, will be dissolved. **Horton Conrad,** president of Material Movement Industries, has been appointed to direct sales of the new conveyor division.

OBITUARY

C. W. Hiner, district engineer of the Portland Cement Association at Omaha, Neb., for the past eight years, died recently at his home in Lincoln, Neb.

EQUIPMENT AND SUPPLIES

Domestic Equipment Orders Reported in April

An order for 200 50-ton hopper cars by the Wabash was the only domestic equipment order reported by *Railway Age* in April. The cars, to be built in the road's own shops, will cost an estimated $800,000. During the first four months of 1949, *Railway Age* has reported domestic orders for 3,185 freight cars and 30 passenger cars, costing an estimated $15,840,000; and 69 Diesel-electric locomotive units, 13 steam and 4 electric locomotives, the estimated cost of which is $17,052,600.

FREIGHT CARS

The **New Jersey, Indiana & Illinois** is inquiring for 50 50-ton automobile box cars.

The **Pacific Great Eastern** is contemplating the purchase this year of the following freight-train cars at the indicated probable costs: 50 flat cars ($225,000), 10 gondola cars ($30,000) and 4 cabooses ($20,000). Other contemplated purchases include one snow plow ($40,000) and one bull dozer ($14,000).

CONSTRUCTION

R. I. to Spend $3,600,000 on Retarder Yard at Silvis, Ill.

The Chicago, Rock Island & Pacific has authorized the construction of a new car retarder classification yard east of its present facilities at Silvis, Ill., at an estimated cost of $3,600,000. Bids are now being taken on the building work and a pneumatic tube system, while company forces will handle the erection of floodlights and the wiring, signal, radio, communication and track work. A contract for grading and sewer relocation has

been awarded to Kiewit & Condon-Cunningham Co. As noted in the *Railway Age* of April 23, page 59, car retarders and similar equipment have been ordered from the Union Switch & Signal Co.

The Rock Island also plans to convert the southwest 84-ft. by 266-ft. area of its present locomotive erecting shop at Silvis into an electric shop for handling Diesel electric power, by installing new jib and overhead cranes and wash and locker rooms, and providing the necessary electric, gas, air, water, sewer, oxygen and acetylene service lines. The project will be handled by company forces at an approximate cost of $60,000.

The railroad will spend some $143,500 to improve its bridge No. 5485 at Bridgeport, Okla., replacing the present girder spans and pile trestle approach with two 124-ft. through truss spans on concrete piers. A contract for the concrete substruction of fuel-oil, water and sanding Weatherly Construction Co., Kansas City, Mo. Company forces will perform work in connection with steel erection and new deck.

A Diesel repair shop and servicing facilities are to be provided at El Reno, Okla., by constructing a 300-ft. inspection pit in the present steel car shop building. The project—including the construction of fuel-oil, water and sanding facilities, and making necessary track changes—will cost an estimated $46,400. The Industrial Construction Company, Oklahoma City, Okla., will build the pit, and company forces are to complete the balance of the work.

Chicago, Milwaukee, St. Paul & Pacific.—An expenditure of some $400,000 is contemplated by this road in the construction of a two-track extension to its present Diesel servicing building, 44 ft. by 253 ft., at Chicago, including new locomotive wash racks, cinder pits for steam power, and changes in tracks leading into the adjoining roundhouse. The contractor is Ragnar Benson, Inc., Chicago.

Green Bay & Western.—This road is now laying eight miles of 90-lb. rail purchased from the Carnegie-Illinois Steel Corporation, at a total cost of about $104,000.

Chesapeake & Ohio.—This road has awarded the following contracts at the indicated estimated costs: To the Virginia Engineering Company, Newport News, Va., for sanitary facilities to connect with sewage disposal area at Newport News ($179,175); to the Stefco Steel Company, Michigan City, Mich., for a Diesel house and tracks at Muskegon, Mich. ($46,000), and to Stefco Steel for a freight house and tracks at Ludington, Mich. ($41,447).

Pacific Great Eastern.—This company expects to begin constructing this summer an 85-mi. extension from Quesnel, B. C., to connect with the Canadian National at Prince George, B. C. The project is estimated to cost approximately $9,500,000. No contracts have been awarded yet.

ABANDONMENTS

Application has been filed with the Interstate Commerce Commission by:

Denver & Rio Grande Western. — To abandon its 11.5-mi. Reilly Canyon branch from Longsdale Junction, Colo., to Bon Carbo, and to abandon operation under trackage agreement of 4.12 mi. from Jansen to Longsdale Junction. The application stated that traffic on the branch has decreased to the point of making operation uneconomical.

FINANCIAL

Alleghany Corporation.—*To Reduce C. & O. Holdings.*—The Alleghany Corporation has announced that it intends to exchange a portion of its holdings of Chesapeake & Ohio common stock for approximately 50 per cent of the outstanding Alleghany prior preferred stock and about 10 per cent of the outstanding series A preferred shares. The rate of exchange would be 2¼ C. & O. common shares for each Alleghany prior preferred share and 1½ C. & O. common shares for one Alleghany series A preferred share.

Grand Trunk Western.—*New Director.*—A. L. Blakeslee, president and general manager, Kalamazoo Stove & Furnace Co., Kalamazoo, Mich., has been elected a director of this road, succeeding the late F. E. McAllister, chairman and president of the Home Savings Bank, Kalamazoo.

Missouri-Kansas-Texas. — *Adjustment Bonds.*—The outline of a plan to issue 1 per cent income debentures in exchange for past-due interest coupons on this road's adjustment mortgage bonds was submitted to Katy security holders on April 29. On that date, $13,555,864 of the bonds, which mature on January 1, 1967, were outstanding, and the accrued unpaid interest on each $1,000 bond was $350. The proposed income debentures would be dated January 1, 1950, and would mature on January 1, 1967. R. J. Morfa, chairman, said the plan "affects the presently outstanding shares of preferred and common stock only insofar as it continues in effect the restriction under the terms of the adjustment mortgage against payment of dividends until presently past due interest on the adjustment mortgage bonds is fully paid or payment thereof provided for. If this plan can be carried to completion, it will clear the way for the adjustment of capital structure of the company as soon as the debentures are completely retired either through operation of the sinking fund, purchase by the company, or by call prior to maturity."

Richmond, Fredericksburg & Potomac.—*Stock Split.*—This road has applied to the Interstate Commerce Commission for authority to issue 433,392 shares of stock, par value $25 per share, to be exchanged for 108,348 shares of outstanding stock, par value $100 per share. The application stated that the proposed split was designed to give the stock a broader market, and thus facilitate future financing.

Southern Pacific.—*Acquisition.*—Division 4 of the Interstate Commerce Commission has authorized this road to purchase the properties of the Union Belt of Oakland, Cal. S. P. control of the Union Belt through stock ownership was previously approved by the commission (see *Railway Age* of October 16, 1948, page 88). The commission's present report said the proposed purchase "will be effected by conveyance of the property to the applicant, as a liquidating shareholder's dividend upon dissolution of the Union Belt."

New Securities

Applications have been filed with the Interstate Commerce Commission by:

Brownsville & Matamoros Bridge.—To extend from May 31 to May 31, 1954, the maturity date of $100,000 of unsecured, non-interest bearing promissory notes. The notes are part of a $200,000 issue held by the applicant's proprietors, the National of Mexico and the St. Louis, Brownsville & Mexico. In seeking the 5-year extension, the applicant told the commission it would be able to pay only $100,000 on May 31.

Erie—To assume liability for $3,450,000 of equipment trust certificates to finance in part the acquisition of the following equipment:

	Description and builder	Estimated Unit Cost
5	2,000-hp. Diesel-electric passenger locomotives (American Locomotive Company)	$207,500
9	1,500-hp. Diesel-electric road switching locomotives Am(erican)	144,450
5	1,000-hp. Diesel-electric switching locomotives (General Motors Corporation, Electro-Motive Division)	97,500
2	1,000-hp. Diesel-electric switching locomotives (American)	97,775
7	1,000-hp. Diesel-electric switching locomotives (Baldwin Locomotive Works)	97,500
4	1,000-hp. Diesel-electric switching locomotives (Lima-Hamilton Corporation)	97,500
4	750-hp. Diesel-electric switching locomotives (Baldwin)	84,000

Total estimated cost of all of the equipment is $4,429,100. The certificates would be dated May 15 and would mature in 10 annual installments of $345,000 each, beginning May 15, 1950. They would be sold on the basis of competitive bids with the interest rate fixed by such bids.

Washington Terminal.—To issue and sell $1,600,000 of its series B first mortgage bonds to reimburse its treasury in part for expenditures made for additions, betterments and improvements. This company's proprietors, the Philadelphia,

THE BALTIMORE AND OHIO RAILROAD COMPANY

SUMMARY OF 1948 ANNUAL REPORT

INCOME:	Year 1948		Comparison with 1947
From transportation of freight, passengers, mail, express, etc.	$400,190,447	I	$39,895,452
From other sources—interest, dividends, rents, etc.	6,529,817	D	775,888
Total Income	$406,720,264	I	$39,119,564
EXPENDITURES:			
Payrolls, materials, fuel, services and taxes	$355,196,706	I	$27,941,444
Interest, rents and miscellaneous services	29,365,263	D	1,720,794
Total Expenditures	$384,561,969	I	$26,220,650
NET INCOME:			
For improvements, sinking funds and other purposes	$22,158,295	I	$12,898,914

B&O net investment in transportation facilities was $1,002,642,766. On this, earnings showed a return of only 4.30%. This was better than the 3.04% earned in 1947, but is still not enough to provide funds needed for essential improvements.

In 1948, improvements cost $58,617,947. Of this, $43,728,392 was invested in equipment, including 58 road Diesel locomotives, 70 Diesel switchers, 3 steam locomotives, 5634 hopper cars, 25 flat cars, and 8 new sleeping cars. Acquisition of this equipment has resulted in improved service and economies.

During the ten years ended December 31, 1948, the principal amount of outstanding System funded debt, other than equipment obligations, was reduced by more than $131,000,000. The saving in annual interest charges is roundly $6,000,000. Equipment obligations increased $68,496,743 during the same period. Annual interest charges on total funded debt, including equipment obligations, outstanding December 31, 1948, were $25,654,751. This is $4,837,760, or about 15.87%, less than at December 31, 1938.

On November 15 a dividend of One Dollar per share was declared on the Company's Preferred Stock, and paid December 22.

R. B. WHITE, *President*

[Advertisement]

Baltimore & Washington (subsidiary of the Pennsylvania), and the Baltimore & Ohio, would guarantee these bonds, which would be secured by the W. T.'s first mortgage dated February 1, 1945. The bonds would be dated May 1, 1949, and would mature May 1, 1974. They would be sold on the basis of competitive bids with the interest rate fixed by such bids. For sinking fund purposes, redemption prices would range from 102⅜ and accrued interest on May 1, 1951, to par and accrued interest on and after May 1, 1970. They would be redeemable at the option of the W.T. as a whole, or in part, in amounts not less than $100,000, on not less than 45 days' notice, at prices ranging from 105 and accrued interest on May 1, 1950, to par and accrued interest from November 1, 1969, to maturity.

Division 4 of the I.C.C. has **authorized:**

High Point, Thomasville & Denton.—To issue an unsecured negotiable promissory note in the amount of $35,000, with interest at 3 per cent. The note, payable to the Wachovia Bank & Trust Co., High Point, N. C., will be substituted for a $30,000 note, dated February 3 (see *Railway Age* of April 9, page 74).

Dividends Declared

Cleveland & Pittsburgh.—4% special, 50¢, quarterly; 7% guaranteed, 87½¢, quarterly; both payable June 1 to holders of record May 10.

Norfolk & Western.—75¢, quarterly, payable June 10 to holders of record May 11.

Reading.—4% non-cumulative 1st preferred, 50¢, quarterly, payable June 9 to holders of record May 19.

Southern.—$1.00, quarterly, payable June 15 to holders of record May 13.

Average Prices Stocks & Bonds

	May 3	Last week	Last year
Average price of 20 representative railway stocks	38.87	39.08	52.64
Average price of 20 representative railway bonds	86.59	86.81	88.38

RAILWAY OFFICERS

EXECUTIVE

J. H. Sweet, superintendent of the Rock Island Southern at Rock Island, Ill., has resigned from that position and has been elected executive vice-president and general manager of the Mississippi & Alabama at Leakesville, Miss.

Following the incorporation of the New York division of the Pennsylvania with that company's Eastern region, as announced in the *Railway Age* of April 30, page 58, **H. H. Pevler** and **H. T. Frushour** will continue as vice-president, and assistant vice-president and chief engineer, respectively, at New York, while **C. F. Trowbridge** has been appointed assistant to the vice-president in charge of operation at Philadelphia, Pa.

H. B. Parr, assistant to the freight traffic manager of the Canadian National, has been appointed assistant to traffic vice-president, with headquarters as before at Montreal, Que., succeeding **E. A. Ryder,** who has been named traffic manager of the Atlantic region.

FINANCIAL, LEGAL & ACCOUNTING

Arthur J. Wallander, auditor of capital expenditures of the Chicago, Milwaukee, St. Paul & Pacific at Chicago, has been appointed chief statistician at that point, succeeding **Chester E. Oliphant,** whose retirement was reported in the *Railway Age* of April 23. Succeeding Mr. Wallander is **R. D. Claborn,** budget engineer at Chicago. A biographical sketch of Mr. Wallander appeared in the *Railway Age* of December 18, 1948, in connection with his promotion to auditor of capital expenditures.

Harry Hurst has been appointed treasurer of the Long Island at Jamaica, N. Y. Other appointments include **R. I. Kistler** as comptroller at Jamaica; **N. J. Aydelotte** as real estate and purchasing agent at New York; and **H. M. Cooke** as general claim agent at New York. **J. V. Calvin** will continue as supervisor expenditures and **R. R. Bongartz** as general attorney, both at New York.

M. L. Countryman, Jr., general solicitor of the Northern Pacific at St. Paul, Minn., was elected general counsel at a directors' meeting at New York on April 28, succeeding **L. B. daPonte,** who has retired after 39 years of service.

Mr. Countryman, who is a native of St. Paul, obtained his B.A. degree from the University of Minnesota and, after serving as an Infantry captain in World War

M. L. Countryman, Jr.

I, returned to the university to receive his law degree. He subsequently engaged in private law practice at Sioux Falls, S. D., and Duluth, Minn., and later joined the Great Northern's legal department. In 1924 he became general attorney of the N. P. at St. Paul, and was advanced to assistant general counsel in 1928. Mr. Countryman was appointed general solicitor in 1940 and was serving in that position at the time of his election as general counsel.

L. B. daPonte

Mr. daPonte is a native of Texas and began law practice at Beaumont, Tex., following graduation from the University of Texas Law School. He entered N. P. service in 1910 as assistant division counsel at Tacoma, Wash., and subsequently served as assistant western counsel and western counsel at Seattle, Wash. In 1937 he was elected general counsel, the post he held at the time of his retirement.

J. G. Griffith has been appointed district freight claim agent of the Pennsylvania at Pittsburgh, Pa., succeeding **J. A. Downing,** retired.

OPERATING

The St. Louis-San Francisco has announced the following changes in assistant superintendents: **T. J. Connell,** transferred from Amory, Miss., to Pensacola, Fla., succeeding **T. D. Wages,** who in turn has replaced Mr. Connell; and **E. A. Osborne,** moved from Amory to Sherman, Tex., succeeding **J. F. Lee,** transferred to Fort Scott, Kan.

Thomas J. Kane, whose promotion to division superintendent of the Northern Pacific at Tacoma, Wash., was reported in the *Railway Age* of April 2, was born on April 11, 1889, at What Cheer, Iowa, and attended the Cedar Rapids (Iowa) Business College. He entered railroad service in September, 1906, as a trainmaster's clerk on the Chicago, Rock Island & Pacific at Estherville, Iowa, and the next year became a clerk in the transportation department of the Union Pacific at Cheyenne, Wyo. From April,

Thomas J. Kane

1910, to July, 1929, he held various clerical posts in the transportation departments of the Southern Pacific, the Atchison, Topeka & Santa Fe, the Spokane, Portland & Seattle and the N. P. He was subsequently promoted to trainmaster for the N. P. at St. Paul, Minn., and later served successively in that capacity on the Fargo, St. Paul, Dakota, Yellowstone and Tacoma divisions. In June, 1942, Mr. Kane was advanced to assistant superintendent at Tacoma, which position he held at the time of his recent promotion.

Frank Hubbard Cook, whose promotion to assistant general manager and superintendent of transportation of the International-Great Northern (part of the Missouri Pacific Lines) at Palestine, Tex., was reported in the *Railway Age* of March 26, was born on November 6, 1890, at Seguin, Tex., where he attended high school. He entered M. P. service in April, 1913, as an instrumentman at San Benito, Tex., and later the same year became a transitman at that point. From 1917 to 1925, he held positions as assistant engineer at Kingsville, Tex., office engineer at Houston, Tex., division engineer at Kingsville and locating engineer at San Benito. He subsequently returned to Kingsville as division engineer, and in 1926 was transferred to San Antonio, Tex. He later served successively as trainmaster at North Pleasanton, Tex., Taylor and San Antonio, becoming division engineer at Palestine, Tex., in

Frank Hubbard Cook

1932. The same year he was promoted to assistant chief engineer at Palestine and was advanced to superintendent at that point in 1941. Mr. Cook was granted a sick leave in December, 1947, and returned to Palestine as superintendent in April, 1948, which post he held at the time of his recent promotion.

John F. Gruber, whose appointment as superintendent of the Philadelphia division of the Reading at Philadelphia, Pa., was reported in the *Railway Age* of April 16, entered railroad service on September 20, 1919, with the Reading. After

John F. Gruber

serving as clerk at Reading, Pa., he was promoted to chief clerk at St. Clair, Pa., on July 6, 1925, becoming extra yardmaster on July 2, 1934, and yardmaster on March 16, 1937, at St. Clair. On May 1, 1939, Mr. Gruber was appointed general yardmaster at Pottstown, Pa., transferring to Coatesville, Pa., six months

later. He was appointed assistant trainmaster at Reading on January 1, 1941; acting supervisor yards at Reading on May 12, 1943; night terminal trainmaster at Philadelphia on October 1, 1943; assistant trainmaster at Reading on November 16, 1944; and assistant superintendent of the Philadelphia division on November 1, 1947.

E. B. Rush, whose appointment as general superintendent of the Southern division of the Atlantic Coast Line at Jacksonville, Fla., was reported in the *Railway Age* of April 30, was born at Elloree, S. C., and entered the service of the

E. B. Rush

A.C.L. as a lamp lighter at Creston, S. C., on July 1, 1899. His subsequent positions included those of telegraph operator, dispatcher, chief dispatcher, terminal trainmaster and superintendent. He became superintendent transportation at Jacksonville on July 1, 1940, which position he held until his recent appointment.

Harrison B. Smith, assistant superintendent of the Chicago, St. Paul, Minneapolis & Omaha (part of the Chicago & North Western System), with headquarters at Eau Claire, Wis., has been promoted to division superintendent at St. James, Minn., succeeding **F. J. Taylor,** who has retired. Mr. Smith has been replaced by **Theodore L. Hick,** trainmaster at Tracy, Minn. **Alfred G. Johnson,** assistant division superintendent of Sioux City, Iowa, has been advanced to superintendent of terminals, at Minneapolis, Minn., succeeding **Francis E. Harrison,** whose promotion to general superintendent at St. Paul, Minn., was reported in the *Railway Age* of April 23.

O. L. Crain, assistant superintendent, Northern district, Missouri-Kansas-Texas Lines, at Parsons, Kan., has been promoted to superintendent, Eastern district, with headquarters at Boonville, Mo., succeeding **F. P. Stocker,** who has retired. Mr. Crain has been replaced by **L. F. Ryan,** assistant superintendent, Northwestern district, at Wichita Falls, Tex. **F. H. Schaller,** superintendent, Southern district, at Muskogee, Okla., has been transferred to the South Texas district, with headquarters at Smithville, Tex., succeeding **H. W. Davidson,** who has also retired. **Paul O. Ellis,** superintendent of safety at Dallas, Tex., has succeeded Mr. Schaller.

Mr. Crain, who was born on December 7, 1892, at Oswego, Kan., joined the Katy in April, 1915, as a brakeman at Parsons, and the next year became a switchman at

O. L. Crain

that point. He served in the latter capacity until 1923, when he was promoted to night yardmaster. He was appointed day general yardmaster in 1931, and was advanced to assistant superintendent, Northern district, in 1941.

Mr. Ellis was born on May 2, 1892, at Erie, Kan., and attended the University of Kansas. He entered service with the Katy in 1910 as yard clerk, and was transferred later to the road's engineer-

Paul O. Ellis

ing department. In 1919 he was appointed accounting engineer at Dallas, and was head of the valuation bureau until March, 1923, when he was appointed yardmaster at McAlester, Okla. He was advanced to assistant superintendent, Southern district, in 1942, and later was transferred to Franklin, Mo. In November, 1946, Mr. Ellis was appointed assistant superintendent of safety at Dallas, and in February, 1947, became superintendent of safety.

Following the incorporation of the New York division of the Pennsylvania with that company's Eastern region, announced in the *Railway Age* of April 30, page 58, the following appointments became effective May 1: **J. B. Jones,** as general superintendent, Northwestern division, at Chicago; **M. S. Smith,** as superintendent, Philadelphia division, at Harrisburg, Pa.; **R. W. Grigg,** as superintendent, Fort Wayne division, at Fort Wayne, Ind.; **E. W. Headland,** as assistant superintendent, New York division, at New York; **R. L. Agnew,** as assistant superintendent, New York division, in charge of passenger operation, at New York; **G. F. Walter,** as assistant to general manager, Eastern region, at New York; and **W. C. Fisher,** as supervising agent, New York division, at New York. **A. M. Harris,** superintendent freight transportation, Eastern region, at Philadelphia, has been granted a leave of absence.

David E. Smucker, trustee of the Long Island, has been appointed also chief operating officer, with headquarters at Jamaica, N. Y., and **J. N. Kanzler** has been appointed assistant to chief operating officer. **H. B. Stetson** will continue as superintendent at Jamaica.

Thomas C. Smith, superintendent of the Ohio division of the Baltimore & Ohio, has been appointed assistant general manager of the Western region, with headquarters as before at Cincinnati, Ohio. **John F. Robbert,** assistant superintendent of the Ohio division, succeeds Mr. Smith as superintendent of that division. **W. R. Branson,** assistant trainmaster at Brighton, Ohio, has been appointed terminal trainmaster at Cincinnati, succeeding **C. S. Darling,** who has been promoted to assistant superintendent of the Ohio division.

TRAFFIC

Burson H. Lewis, whose promotion to assistant freight traffic manager of the Wabash at Detroit, Mich., was reported in the *Railway Age* of April 23, was born at Malinta, Ohio, on March 19, 1902, and was educated in the public schools at Tecumseh, Mich., and at the Detroit Business University. He entered railroad service with the Wabash in June, 1917, as a clerk in the freight office at Detroit, and two years later became chief clerk to the division freight agent. From 1922 to 1929, he served as a representative of the freight department, and was next appointed traveling freight agent, with headquarters at Detroit. Mr. Lewis was advanced to assistant general freight agent at Detroit in December, 1944, which post he held at the time of his promotion.

James P. Donahue, whose promotion to general passenger agent of the Illinois Terminal at Springfield, Ill., was reported in the *Railway Age* of April 23, was born on March 27, 1904, at St. Louis, Mo., where he attended high school and busi-

ness school. He entered railroad service in his native city in December, 1923, as a clerk in the local freight department of the Illinois Traction System (predecessor of the I. T.), and later served in the same capacity in the ticket office at that point and in the mechanical department at Decatur, Ill. He was promoted to agent in the ticket office at St. Louis in May, 1936, and became station master at that point in June, 1940. In November, 1943, Mr. Donahue was advanced to assistant general passenger agent at Springfield, the post he held at the time of his recent promotion.

C. W. Linker, district passenger agent of the Pennsylvania at Pittsburgh, Pa., has been appointed division passenger agent at Buffalo, N. Y., succeeding **T. M. Goldsborough,** retired. **G. W. P. Roach,** district passenger agent at Denver, Colo., has been transferred to Pittsburgh, to succeed Mr. Linker.

Ralph V. Blackstrom, formerly extension economist in marketing for the Minnesota Agricultural Extension Service, has been appointed assistant director of the Great Northern's agricultural and mineral development department, at St. Paul, Minn.

E. C. Rasmussen, whose promotion to general freight agent of the Union Pacific at Los Angeles, Cal., was reported in the *Railway Age* of April 2, is a native of St. Paul, Neb. He entered railroad service with the U. P. in October, 1923, as a stenographer in the general freight

E. C. Rasmussen

office at Omaha, Neb., and subsequently served in a number of positions in that department until April, 1929, when he became rate clerk. Mr. Rasmussen was appointed chief clerk in the freight traffic department at Omaha, in November, 1943, which post he held at the time of his recent promotion.

Richard Stites, traveling passenger agent of the Louisville & Nashville, with headquarters at Lexington, Ky., has been appointed to the newly-created post of district freight and passenger agent at that point. **George A. Van Gieson,** division freight agent at Lexington, has retired after 40 years of railroad service, and his position has been abolished.

Warren E. Thompson, whose appointment as general freight agent of the St. Louis Southwestern at Little Rock, Ark., was reported in the *Railway Age* of April 23, was born at Hector, Minn., on November 6, 1902. He entered service with the Cotton Belt in December, 1920, as a freight agent-telegrapher, and later served successively as clerk and solicit-

Warren E. Thompson

ing freight agent at Little Rock, Ark., and as commercial agent at Camden, Ark. He was advanced to general agent at Chattanooga, Tenn., in 1930, and was transferred to Atlanta, Ga., the next year. Mr. Thompson returned to Little Rock in May, 1945, as assistant general freight and passenger agent, the post he held at the time of his recent appointment.

Carl M. Gautwick, assistant general freight agent of the Northern Pacific at Chicago, has been promoted to general freight agent at that point, succeeding **R. J. Tozer,** who has retired. **B. L. Younglove** has replaced Mr. Gautwick. **R. C. Murphy,** general agent at Fargo, N. D., has been appointed assistant general freight and passenger agent at that point.

W. P. Eckfeldt has been appointed general passenger agent of the Long Island at New York. **H. A. Weiss** will continue as traffic manager at Jamaica, N. Y., and **K. M. Potter** as general freight agent at New York.

MECHANICAL

P. S. Mock will continue as superintendent motive power of the Long Island at Morris Park (Richmond Hill), N. Y.

H. C. Griffith, assistant chief engineer traction — communications — signals, of the Pennsylvania system, has been appointed chief electrical engineer, with headquarters as before at Philadelphia, Pa. **E. L. Bachman,** general superintendent motive power of the New York Zone at New York, has been granted a leave of absence.

PURCHASES & STORES

N. J. Aydelotte has been appointed real estate and purchasing agent of the Long Island at New York.

ENGINEERING & SIGNALING

L. W. Funk, whose appointment as assistant chief engineer of the Atlantic Coast Line at Wilmington, N. C., was reported in the *Railway Age* of April 30, was born at Charleston, S. C., and was graduated from Alabama Polytechnic Institute, Auburn, Ala., in civil engineering. Mr. Funk entered Coast Line service on April 1, 1919, as rodman at Palm-

L. W. Funk

dale, Fla., and served successively as inspector, instrumentman, draftsman, junior engineer and assistant engineer. He joined the Charleston & Western Carolina (A.C.L. affiliate) in 1926 as assistant engineer at Augusta, Ga., and was appointed engineer maintenance of way on October 1, 1940, which position he was holding at the time of his recent appointment as assistant chief engineer of the A.C.L.

T. W. Pinard has been appointed chief engineer, **J. M. Nicholson,** assistant chief engineer, and **S. B. Higgenbottom,** signal engineer, of the Long Island at New York.

The jurisdiction of the maintenance of way department of the Jersey Central Lines has been transferred from the chief operating officer to the engineering department, effective May 1. **Thomas E. MacMannis,** engineer maintenance of way, will continue in that capacity, with jurisdiction over maintenance of track and right of way. **Carl H. Vogt,** division engineer, has been appointed assistant engineer maintenance of way. **Bernard J. Minetti,** bridge engineer, has been appointed engineer structures, in charge of

News Department continued on next left-hand page

Announcement

(This is the text of an announcement made on April 12, 1949)

The American Locomotive Company and the Lima-Hamilton Corporation are pleased to make the following announcement:

Effective immediately, repair parts for steam locomotives which were manufactured by the American Locomotive Company will be available from the Lima-Hamilton Corporation.

This, however, in no way alters the activities of the Railway Steel Spring Division of the American Locomotive Company, which will continue to manufacture locomotive tires, springs, box lids, pedestal liners and wear plates at its plants at Latrobe, Pennsylvania, and Chicago Heights, Illinois, or of the American Locomotive plant at Richmond, Virginia, which manufactures specialties including staybolts and reverse gears.

Lima-Hamilton Corporation has procured from American Locomotive Company the patterns, boiler formers and special fixtures and gauges which were used by American Locomotive Company in the manufacture of steam locomotive parts, and also certain special machinery.

American Locomotive Company has entered into this agreement as the most satisfactory way of assuring its customers that repair parts will continue to be available now that it has discontinued the manufacture of steam locomotives. Lima-Hamilton Corporation, on its part, recognizes the responsibility that rests upon it to continue to supply steam locomotive parts promptly, at a reasonable cost and of the same high standards of manufacture that have prevailed in the parts supplied by American Locomotive Company and Lima-Hamilton Corporation in the past.

Will you please send your inquiries for repair parts, for steam locomotives built by American Locomotive, directly to Lima-Hamilton Corporation at their plant at Lima, Ohio.

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design and maintenance of bridges and buildings. **John R. Prizer,** division engineer, has been appointed engineer maintenance of structures. **Edward J. Robrecht,** assistant division engineer, has been appointed assistant engineer maintenance of structures. All will have headquarters at Jersey City, N. J.

John E. Hoving, principal assistant engineer of the Northern Pacific at St. Paul, Minn., has been appointed district engineer at that point, succeeding **Henry F. Brown,** who has retired after 43 years of service. Mr. Hoving has been succeeded by **D. H. Shoemaker,** office engineer at St. Paul. **W. R. Bjorklund,** assistant district engineer at Billings, Mont., has been appointed to replace Mr. Shoemaker.

Following the incorporation of the New York division of the Pennsylvania with that company's Eastern region, announced in the *Railway Age* of April 30, page 58, the following appointments became effective May 1: **W. G. Salmonson,** as assistant chief engineer—signals at Philadelphia, Pa.; **D. E. Rudisill** as assistant chief engineer, maintenance of way, Central region, at Pittsburgh, Pa.; and **W. G. Kemmerer,** as assistant engineer bridges and buildings, Eastern region, at Philadelphia.

SPECIAL

Joseph A. Clancy, supervisor of safety of the New York, New Haven & Hartford, has retired after 41 years of service. **James F. Toohey** has been appointed director of safety and training and will continue supervision of suggestion system activities.

B. A. McDonald, formerly superintendent of rules for the Missouri-Kansas-Texas at Dallas, Tex., has been appointed to the newly-consolidated position of superintendent of rules-safety. As superintendent of safety he succeeds **P. O. Ellis,** appointed superintendent, Southern district, at Muskogee, Okla. **Charles J. Knapp,** publicity representative, has been promoted to editor of the Katy Employees' Magazine and public relations representative. **R. G. Craft,** of Austin, Tex., has succeeded Mr. Knapp.

Joe Marshall, special representative of the Freight Claim Division, Association of American Railroads, Chicago, retired on April 30.

T. R. Colfer has been appointed manager personnel of the Long Island at Jamaica, N. Y.

OBITUARY

Dale E. Gilbert, late assistant freight traffic manager of the Wabash at Detroit, Mich., whose death was reported in the *Railway Age* of April 23, was born on November 17, 1887, at Attica, Ind., where he entered railroad service with the Wabash in July, 1906, as clerk and freight handler. The next year he was transferred to Toledo, Ohio, and two years later was appointed chief clerk in the general agent's office at Pittsburgh, Pa. He subsequently served as contracting agent and traveling freight agent at Pittsburgh until 1912, when he became commercial agent at Cleveland, Ohio. He returned to Toledo in 1916 as division freight agent, becoming assistant general freight agent at that point in 1925. Mr. Gilbert was promoted to assistant freight traffic manager at Detroit in 1941, which post he held at the time of his death.

James J. Gallagher, engineer, maintenance of way, of the Missouri-Kansas-Texas Lines, at Dallas, Tex., died on April 29 in that city, following a heart attack. Mr. Gallagher, who was a native of Lamar, Mo., entered Katy service as an instrumentman in the engineering department at Parsons, Kan., immediately after graduation from the University of Missouri in 1919. He was subsequently advanced to assistant engineer at Parsons and was later transferred to Muskogee, Okla. He served as roadmaster at Wichita Falls, Tex., Denison, Smithville and Boonville, Mo., from 1921 to 1928, when he was appointed general foreman at Dallas. The next year he returned to Smithville as district engineer, being transferred to Denison in 1931. In October, 1936, Mr. Gallagher was promoted to superintendent at Denison and in March, 1944, became engineer, maintenance of way at Dallas.

James J. Gallagher

Charles F. McTague, who retired on April 1, 1942, as general freight traffic manager of the Delaware, Lackawanna & Western at New York, died at his home in Montclair, N. J., on April 28, at the age of 74.

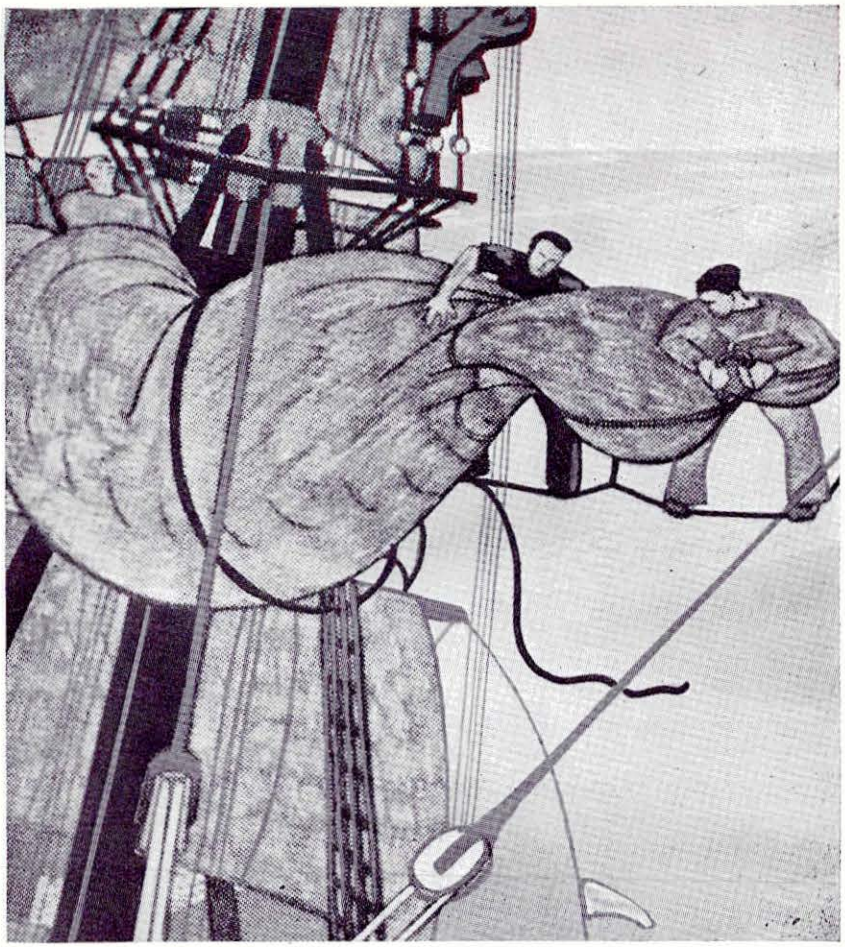
Charles A. Morse, who retired in 1928 as chief engineer of the Chicago, Rock Island & Pacific and who was a past-president of the American Railway Engineering Association, died at Los Angeles, Cal., on April 12, at the age of 90. He had served with the R. I. for 15 years and with the Atchison, Topeka & Santa Fe for 27 years. He was also a past-president of the Western Society of Engineers and the Chicago Engineers Club.

Oscar N. Harstad, late vice-president of the Chicago, Milwaukee, St. Paul & Pacific, whose death was reported in the *Railway Age* of April 30, was a native of Sioux City, Iowa, where he began his railroad career with the Milwaukee Road in January, 1904, as a stenographer. He subsequently served in clerical capacities until 1917, when he became trainmaster. The next year he was advanced to division superintendent at Aberdeen, S. D., and in 1923 was promoted to general superintendent at Chicago. Mr. Harstad was appointed assistant general manager at Chicago in 1924, becoming general manager, Lines East, in 1925. He also served as assistant chief operating officer—system, from 1943 to 1946, when he was elected vice-president—operations. After a recurrent illness forced him to relinquish the latter post in June, 1948, he continued to serve as a vice-president until his death.

Oscar N. Harstad

Willis E. Morse, one-time general superintendent and assistant general manager of the Chicago & North Western and, for a number of years, a member of the train-service board of adjustment, Western Region, died in Hollywood, Cal., on April 21, at the age of 84. His career also included service as general manager of the Chicago, Rock Island & Pacific's Missouri Lines, as vice-president of the Denver & Salt Lake and with the U. S. Railroad Administration during World War I. At the time of his death, Mr. Morse was board chairman of the Colorado-Utah Coal Company.

Ralph M. Shaw, chairman of the board and general counsel of the Chicago Great Western, at Chicago, died in Passavant hospital in that city on May 3, following a brief illness. Mr. Shaw, 80, was a member of the law firm of Winston, Strawn, Shaw & Black, counsel for a number of railroads.



One ship drives east and another west
While the self-same breezes blow:
Tis the set of the sail and not the gale
That bids them where to go.
—ELLA WHEELER WILCOX
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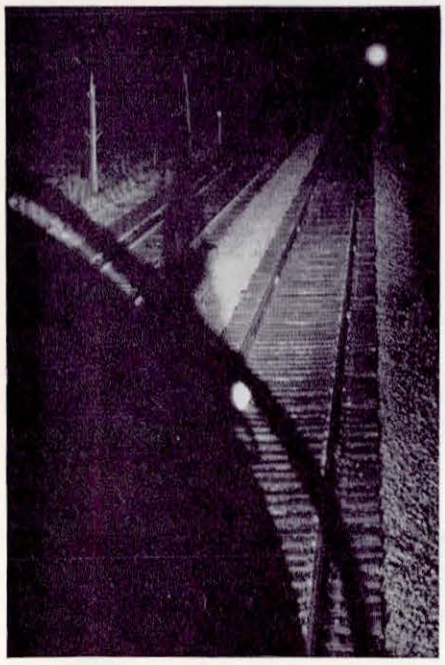

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GENERAL NEWS

R. R. Trucking Operations

(Continued from page 61)

As to its authority to impose the additional conditions at this time, the commission emphasized the reserved authority in the certificate. It also considered the matter in the light of the Supreme Court's decision in the Seatrain case. "To do now that which we specifically reserved the right to do," it said, "does not constitute a partial revocation of the certificate within the purview of the Seatrain case. Were it otherwise the reservation of such right would have been meaningless." Meanwhile, the commission admitted that, in exercising the reserved right to impose additional conditions, it can not now (under its own precedents) condemn as unlawful Transit's past operations which were "beyond our intent."

Dealing with Transit's contention that the imposition of additional restrictions at this time is arbitrary, the commission said the evidence indicated that it had an "obligation" to impose them. The evidence it had in mind was that on the extent of Transit's all-motor operations. "The magnitude of such operations and, by the same token, the importance of the invasion by the railroad of the field of all-motor service," the report said, "is graphically shown by its argument that imposition of the proposed restrictions will damage it to the extent of $500,000 or more in annual revenue."

The contention that the restrictions discriminate against railroad affiliates "hardly merits mention," the commission said. "The act itself," it added, "imposes a special burden of proof on railroads or railroad affiliates seeking to acquire motor carriers. . . . .The. . .restrictions. . . have been approved and encouraged by the courts in several. . .cases."

The commission then proceeded to its discussion of MC-F-2327. It noted that although Division 4's report in that case imposed no conditions, its finding was that the acquisition of the Frederickson rights by Transit would enable the Rock Island "to use service by motor vehicle to public advantage in its operations, and will not unduly restrain competition." Also, the commission found in the division's report language which made it "clear beyond any doubt that the acquisition was approved solely to enable Transit to improve the auxiliary and supplemental service which it was already performing under the previously acquired White Lines' operating rights."

Here Transit contended that issuance of a certificate pursuant to the division's favorable report and order was a "ministerial act" which the commission was was bound to perform. The commission found that argument "unsound." It cited several prior decisions by itself and the courts to show that the proceeding was reopened "while it was yet under our control." And it went on to say there could be no argument that Transit, when it consummated the transaction, did not understand what was meant by "an "auxiliary or supplementary service." This is because Division 4's report in the case "followed by more than 22 months" the commission's report in *Texas & Pacific M. Transport Co. Com. Car Application*, 41 M.C.C. 721, "in which there was spelled out in detail the limits and details of the auxiliary and supplementary" service. "Clearly," the commission added, "there is no hardship or element of unfairness in our reopening the proceeding before issuance of the certificate for the purpose of imposing restrictions calculated to insure that the future operations did not exceed our intent."

Stevens Institute Scholarship

The Mechanical Division of the Association of American Railroads has recently called the attention of its members to its special scholarship at Stevens Institute of Technology, Hoboken, N. J. The scholarship, established in 1891, has a total value of $1,200, and will be available this September to sons of members of the division.

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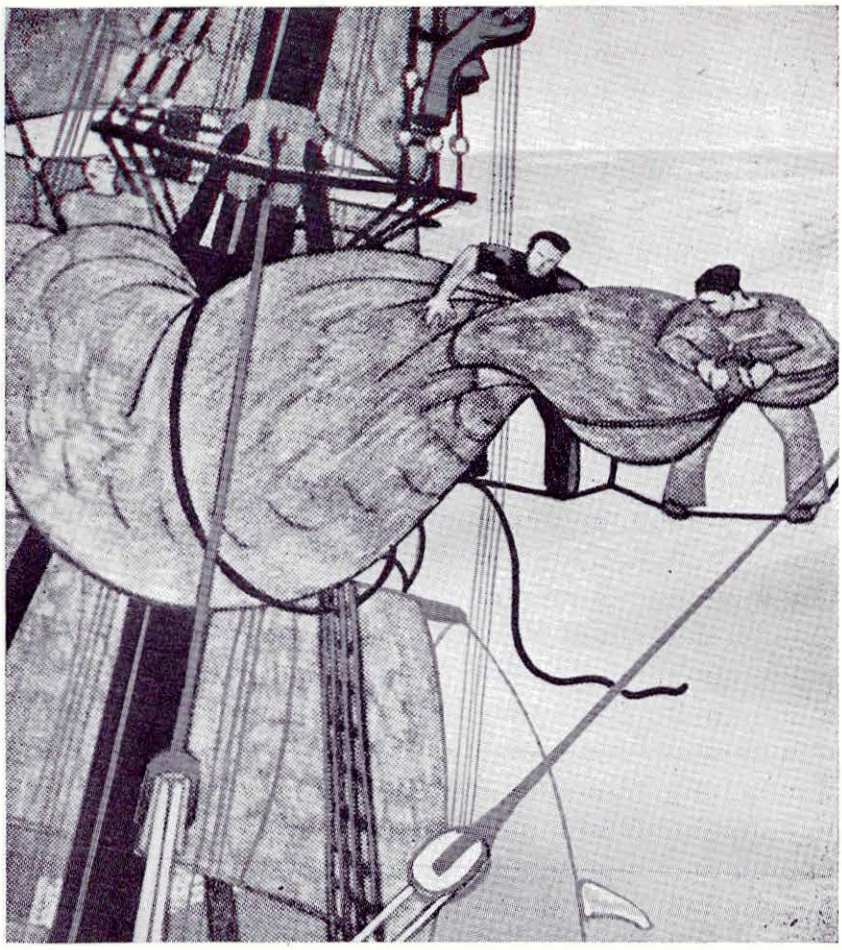

One ship drives east and another west
While the self-same breezes blow:
Tis the set of the sail and not the gale
That bids them where to go.

—ELLA WHEELER WILCOX

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OPERATING REVENUES AND OPERATING EXPENSES OF CLASS I STEAM RAILWAYS

Compiled from 128 monthly reports of revenues and expenses representing 132 Class I steam railways

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF FEBRUARY 1949 AND 1948

Item	United States		Eastern District		Southern District		Western District	
	1949	1948	1949	1948	1949	1948	1949	1948
Miles of road operated at close of month	226,685	227,229	53,490	53,699	46,044	46,162	127,151	127,368
Revenues:								
Freight	$559,185,699	$589,893,571	$220,859,136	$228,986,932	$121,352,093	$128,412,973	$216,974,470	$232,493,666
Passenger	67,373,893	72,064,916	35,352,847	36,801,669	12,179,853	12,886,627	19,841,193	22,376,620
Mail	16,283,783	14,060,950	6,113,955	4,893,311	2,992,939	2,603,397	7,176,889	6,564,242
Express	4,113,576	9,333,746	1,196,938	2,203,253	771,087	2,008,740	2,145,551	5,121,753
All other operating revenues	28,792,355	30,537,458	12,708,031	13,443,979	4,927,601	5,481,419	11,156,723	11,612,060
Railway operating revenues	675,749,306	715,890,641	276,230,907	286,329,144	142,223,573	151,393,156	257,294,826	278,168,341
Expenses:								
Maintenance of way and structures	97,477,411	95,049,784	34,327,043	34,646,422	21,246,295	21,829,070	41,904,073	38,574,292
Depreciation	10,545,752	10,316,386	4,440,174	4,392,874	1,861,585	1,781,322	4,243,993	4,142,190
Retirements	536,814	454,468	170,522	98,246	89,314	81,786	276,978	274,436
Deferred maintenance	*159,661	*405,843	*1,166	*6,272	*35,750	*175,551	*122,745	*224,020
Amortization of defense projects	150,515	416,777	14,681	11,448	46,056	43,335	89,778	361,994
Equalization	5,247,011	5,148,462	2,379,492	1,872,595	1,601,018	2,041,477	1,266,501	1,234,390
All other	81,156,980	79,119,534	27,323,340	28,277,531	17,684,072	18,056,701	36,149,568	32,785,302
Maintenance of equipment	133,488,662	134,319,948	54,712,944	57,723,859	27,322,492	27,245,276	51,453,226	49,350,813
Depreciation	22,222,204	19,862,613	8,521,976	7,705,752	4,983,683	4,456,655	8,716,545	7,700,206
Retirements	*62,949	*259,988	*13,786	*6,895	*7,949	*16,967	*41,214	*236,126
Deferred maintenance and major repairs	*173,380	*417,264	*101,584	.....	*44,371	*91,725	*27,425	*325,539
Amortization of defense projects	1,217,652	1,268,500	451,371	451,047	233,990	238,925	532,291	578,528
Equalization	506,654	468,905	29,991	109,699	418,028	321,795	58,635	37,411
All other	109,778,481	113,397,182	45,824,976	49,464,256	21,739,111	22,336,593	42,214,394	41,596,333
Traffic	16,016,131	15,340,690	5,630,826	5,150,569	3,439,679	3,519,500	6,945,626	6,670,621
Transportation—Rail line	287,903,237	309,584,999	121,614,115	133,938,657	53,019,660	58,889,648	113,269,462	116,756,694
Miscellaneous operations	10,000,794	10,645,434	3,747,974	4,018,398	1,621,882	1,819,404	4,630,938	4,807,632
General	22,891,533	21,414,827	9,096,962	8,145,350	4,844,679	4,551,518	8,849,892	8,717,959
Railway operating expenses	‡567,777,768	586,355,682	229,129,864	243,623,255	111,494,687	117,854,416	227,153,217	224,878,011
Net revenue from railway operations	107,971,538	129,534,959	47,101,043	42,705,889	30,728,886	33,538,740	30,141,609	53,290,330
Railway tax accruals	65,466,386	77,254,849	25,399,948	28,587,201	15,608,123	18,064,996	24,458,315	30,602,652
Pay-roll taxes	20,528,610	29,790,886	8,353,597	12,610,578	4,004,925	5,884,974	8,170,088	11,295,334
Federal income taxes†	18,653,424	22,323,964	8,278,619	6,198,509	6,024,180	6,903,601	5,350,625	9,221,854
All other taxes	26,284,352	25,139,999	9,767,732	9,778,114	5,579,018	5,276,421	10,937,602	10,085,464
Railway operating income	42,505,152	52,280,110	21,701,095	14,118,688	15,120,763	15,473,744	5,683,294	22,687,678
Equipment rents—Dr. balance	9,481,855	9,458,680	4,883,011	5,382,244	*435,719	*1,409,867	5,034,563	5,486,303
Joint facility rent—Dr. balance	3,269,082	3,396,135	1,420,241	1,427,003	551,958	523,574	1,296,883	1,445,558
Net railway operating income	29,754,215	39,425,295	15,397,843	7,309,441	15,004,524	16,360,037	*648,152	15,755,817
Ratio of expenses to revenues(percent)	84.0	81.9	82.9	85.1	78.4	77.8	88.3	80.8

FOR THE TWO MONTHS ENDED WITH FEBRUARY 1949 AND 1948

Item	United States		Eastern District		Southern District		Western District	
	1949	1948	1949	1948	1949	1948	1949	1948
Miles of road operated at close of month	226,680	227,223	53,490	53,700	46,038	46,155	127,152	127,368
Revenues:								
Freight	$1,153,932,725	$1,203,254,984	$458,831,592	$459,144,296	$250,542,333	$263,460,409	$444,558,800	$480,650,279
Passenger	148,896,370	152,961,841	77,777,614	78,395,224	26,133,995	26,593,394	44,984,761	47,973,223
Mail	33,594,007	29,198,597	12,260,474	10,339,706	6,171,837	5,318,026	15,161,696	13,540,865
Express	9,096,148	17,217,660	2,293,880	3,609,862	2,024,847	3,817,082	4,777,421	9,790,716
All other operating revenues	60,916,402	63,992,347	26,991,303	28,230,609	10,599,092	11,294,787	23,326,007	24,466,951
Railway operating revenues	1,406,435,652	1,466,625,429	578,154,863	579,719,697	295,472,104	310,483,698	532,808,685	576,422,034
Expenses:								
Maintenance of way and structures	200,742,807	197,486,709	71,305,085	73,485,468	43,418,142	44,339,553	86,019,580	79,661,688
Depreciation	21,067,717	20,596,410	8,880,877	8,754,739	3,701,151	3,565,656	8,485,689	8,276,015
Retirements	1,539,793	943,221	228,135	211,514	116,171	132,660	1,195,487	599,047
Deferred maintenance	*270,779	*737,727	*3,470	*16,403	*85,787	*335,126	*181,522	*386,198
Amortization of defense projects	304,389	559,067	29,366	24,743	95,351	86,721	179,672	447,603
Equalization	10,966,352	10,446,492	4,390,775	3,858,395	3,477,109	3,866,425	3,098,468	2,721,672
All other	167,135,335	165,679,246	57,779,402	60,652,480	36,114,147	37,023,217	73,241,786	68,003,549
Maintenance of equipment	279,421,142	274,808,059	115,991,251	117,369,760	56,194,446	55,699,473	107,235,445	101,738,826
Depreciation	44,367,506	39,694,680	17,114,736	15,535,936	9,899,014	8,882,601	17,353,756	15,276,143
Retirements	*120,963	*327,969	*20,820	*7,001	*19,436	*71,318	*80,707	*249,650
Deferred maintenance and major repairs	*345,371	*829,536	*185,854	.....	*97,781	*188,256	*61,736	*641,280
Amortization of defense projects	2,444,306	2,494,810	901,974	903,476	477,795	477,589	1,064,537	1,113,745
Equalization	933,466	964,452	47,532	216,292	765,626	617,432	120,308	130,728
All other	232,142,198	232,811,622	98,133,683	100,721,057	45,169,228	45,981,425	88,839,287	86,109,140
Traffic	32,274,387	30,818,418	11,046,299	10,240,816	7,066,964	7,021,836	14,161,124	13,555,766
Transportation—Rail line	603,563,647	632,826,289	255,078,224	271,311,028	111,824,371	120,957,901	236,661,052	240,057,360
Miscellaneous operations	21,577,617	22,319,259	8,153,506	8,507,162	3,439,217	3,743,806	9,984,894	10,068,291
General	46,467,185	43,952,466	18,123,994	16,864,145	9,880,283	9,438,194	18,462,908	17,650,127
Railway operating expenses	♯1,184,046,785	1,202,211,200	479,698,359	498,278,379	231,823,423	241,200,763	472,525,003	462,732,058
Net revenue from railway operations	222,388,867	264,414,229	98,456,504	81,441,318	63,648,681	69,282,935	60,283,682	113,689,976
Railway tax accruals	133,095,464	155,910,001	52,489,339	55,147,258	32,342,106	36,893,339	48,264,019	63,869,404
Pay-roll taxes	42,659,293	60,787,110	17,604,458	25,555,856	8,301,445	12,037,342	16,753,390	23,193,912
Federal income taxes†	37,406,419	46,065,628	14,913,966	11,510,246	12,874,982	14,345,638	9,617,471	20,209,744
All other taxes	53,029,752	49,057,263	19,070,915	18,081,156	11,165,679	10,510,359	21,893,158	20,465,748
Railway operating income	89,293,403	108,504,228	45,967,165	26,294,060	31,306,575	32,389,596	12,019,663	49,820,572
Equipment rents—Dr. balance	19,882,616	20,433,925	9,693,187	10,339,813	*1,178,785	*2,463,477	11,368,214	12,557,589
Joint facility rent—Dr. balance	6,412,093	6,998,554	2,902,869	3,266,276	1,039,460	1,047,801	2,419,764	2,684,477
Net railway operating income	62,998,694	81,071,749	33,371,109	12,687,971	31,395,900	33,805,272	*1,768,315	34,578,506
Ratio of expenses to revenues (percent)	84.2	82.0	83.0	86.0	78.5	77.7	88.7	80.3

‡ Includes $13,207,956 accrued in anticipation of major wage awards.
♯ Includes $28,366,937 accrued in anticipation of major wage awards.
* Decrease, deficit, or other reverse item.
† Includes income tax and surtax.
Compiled by the Bureau of Transport Economics, Interstate Commerce Commission. Subject to revision.

did you hear the one about the

Two Traveling Men?

Once there were two traveling men, who boarded separate trains for an overnight journey. One got off next morning full of pep and bounce, ready for a big day's work. "Slept like a top," he reported. "Smoothest ride I ever had."

The other emerged heavy-eyed and pessimistic. "What a ride!" he said. "Almost got jolted out of my berth. Hardly slept a wink." And the point of the story is—which one was *your* passenger? . . . and which one will *stay* your passenger?

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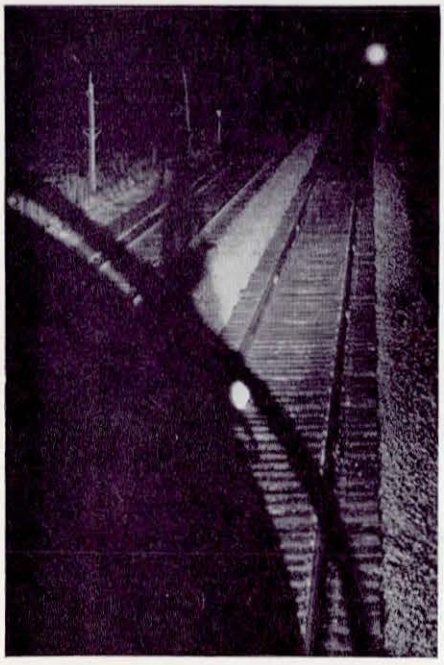

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GENERAL NEWS

R. R. Trucking Operations

(Continued from page 61)

As to its authority to impose the additional conditions at this time, the commission emphasized the reserved authority in the certificate. It also considered the matter in the light of the Supreme Court's decision in the Seatrain case. "To do now that which we specifically reserved the right to do," it said, "does not constitute a partial revocation of the certificate within the purview of the Seatrain case. Were it otherwise the reservation of such right would have been meaningless." Meanwhile, the commission admitted that, in exercising the reserved right to impose additional conditions, it can not now (under its own precedents) condemn as unlawful Transit's past operations which were "beyond our intent."

Dealing with Transit's contention that the imposition of additional restrictions at this time is arbitrary, the commission said the evidence indicated that it had an "obligation" to impose them. The evidence it had in mind was that on the extent of Transit's all-motor operations. "The magnitude of such operations and, by the same token, the importance of the invasion by the railroad of the field of all-motor service," the report said, "is graphically shown by its argument that imposition of the proposed restrictions will damage it to the extent of $500,000 or more in annual revenue."

The contention that the restrictions discriminate against railroad affiliates "hardly merits mention," the commission said. "The act itself," it added, "imposes a special burden of proof on railroads or railroad affiliates seeking to acquire motor carriers. . . . .The. . .restrictions. . . have been approved and encouraged by the courts in several. . .cases."

The commission then proceeded to its discussion of MC-F-2327. It noted that although Division 4's report in that case imposed no conditions, its finding was that the acquisition of the Frederickson rights by Transit would enable the Rock Island "to use service by motor vehicle to public advantage in its operations, and will not unduly restrain competition." Also, the commission found in the division's report language which made it "clear beyond any doubt that the acquisition was approved solely to enable Transit to improve the auxiliary and supplemental service which it was already performing under the previously acquired White Lines' operating rights."

Here Transit contended that issuance of a certificate pursuant to the division's favorable report and order was a "ministerial act" which the commission was was bound to perform. The commission found that argument "unsound." It cited several prior decisions by itself and the courts to show that the proceeding was reopened "while it was yet under our control." And it went on to say there could be no argument that Transit, when it consummated the transaction, did not understand what was meant by "an "auxiliary or supplementary service." This is because Division 4's report in the case "followed by more than 22 months" the commission's report in *Texas & Pacific M. Transport Co. Com. Car Application*, 41 M.C.C. 721, "in which there was spelled out in detail the limits and details of the auxiliary and supplementary" service. "Clearly," the commission added, "there is no hardship or element of unfairness in our reopening the proceeding before issuance of the certificate for the purpose of imposing restrictions calculated to insure that the future operations did not exceed our intent."

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(1) "If unemployment should be developing, then we know it is our obligation to encourage employees to improve as quickly as possible their skill and efficiency on the job as one means of insuring their permanency and progress.

(2) "If inefficient employees are being replaced, then we want to urge training while select jobs are still available.

(3) "Important also is the fact that our educational systems be encouraged to gear their vocational training not only to the needs of the moment, but also to the shape of tomorrow's demands."

A railroad director of personnel had this to say: "In my opinion an employer would be doing only the normal and sensible thing if, when not prevented from doing so by labor agreements, he would give preference to the more skilled and efficient personnel in his organization should it become necessary for him to reduce his forces."

The majority of employers queried stated that the unemployment trend at the moment is one of normal adjustment, and that any business recession in 1949 would not be serious enough to greatly cripple production. The prevailing opinion, according to the survey, is that the threat of unemployment and the general tightening up of the labor market have created a "healthy" situation in which employees will have to step up their own production and efficiency to retain their jobs.

U. P. Travel Queries Increase

The Union Pacific reports a heightened interest in railroad travel this year as compared with 1948, evidenced by an increase of 34 per cent in the number of requests for summer travel literature. Queries have been reaching the road since February at the rate of from 400 to more than 3,000 a day. In excess of 70,000 requests—each requiring an average of five pieces of literature to fulfill—have kept a mailing crew busy days and many nights for the past three months, the road states.

Six Railroads Cited for Employee Safety During 1948

The National Safety Council this week announced the following six railroads as group winners (based on the number of man-hours worked) in its 1948 railroad employees' national safety contest: Illinois Central; Delaware, Lackawanna & Western; Duluth, Missabe & Iron Range; Pennsylvania-Reading Seashore Lines; Alabama Great Southern, and New York Connecting. The combined casualty rate (killed and injured) per million man-hours worked was 3.48 for the six winners, as compared with 8.76 for all Class I railroads.

Among switching and terminal railroads, the Conemaugh & Black Lick took first place in the group whose employees worked more than 1,500,000 man-hours and the Birmingham Southern won top honors among roads whose employees worked less than 1,500,000 man-hours. The San Francisco (Cal.) zone of the Pullman Company had the best employee safety record among the company's operating zones, while the Atlanta (Ga.) shop was winner among Pullman's shop units.

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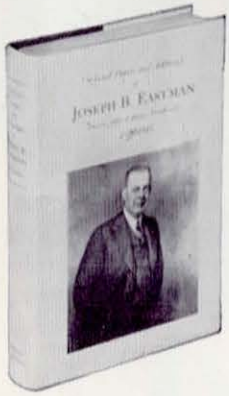

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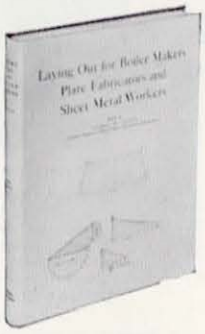

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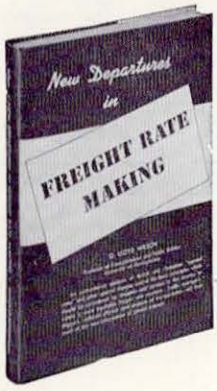

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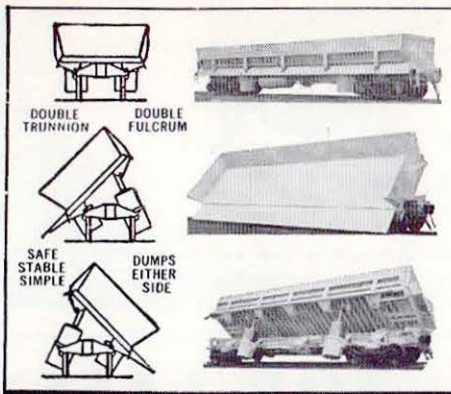

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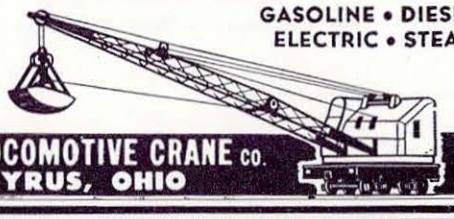

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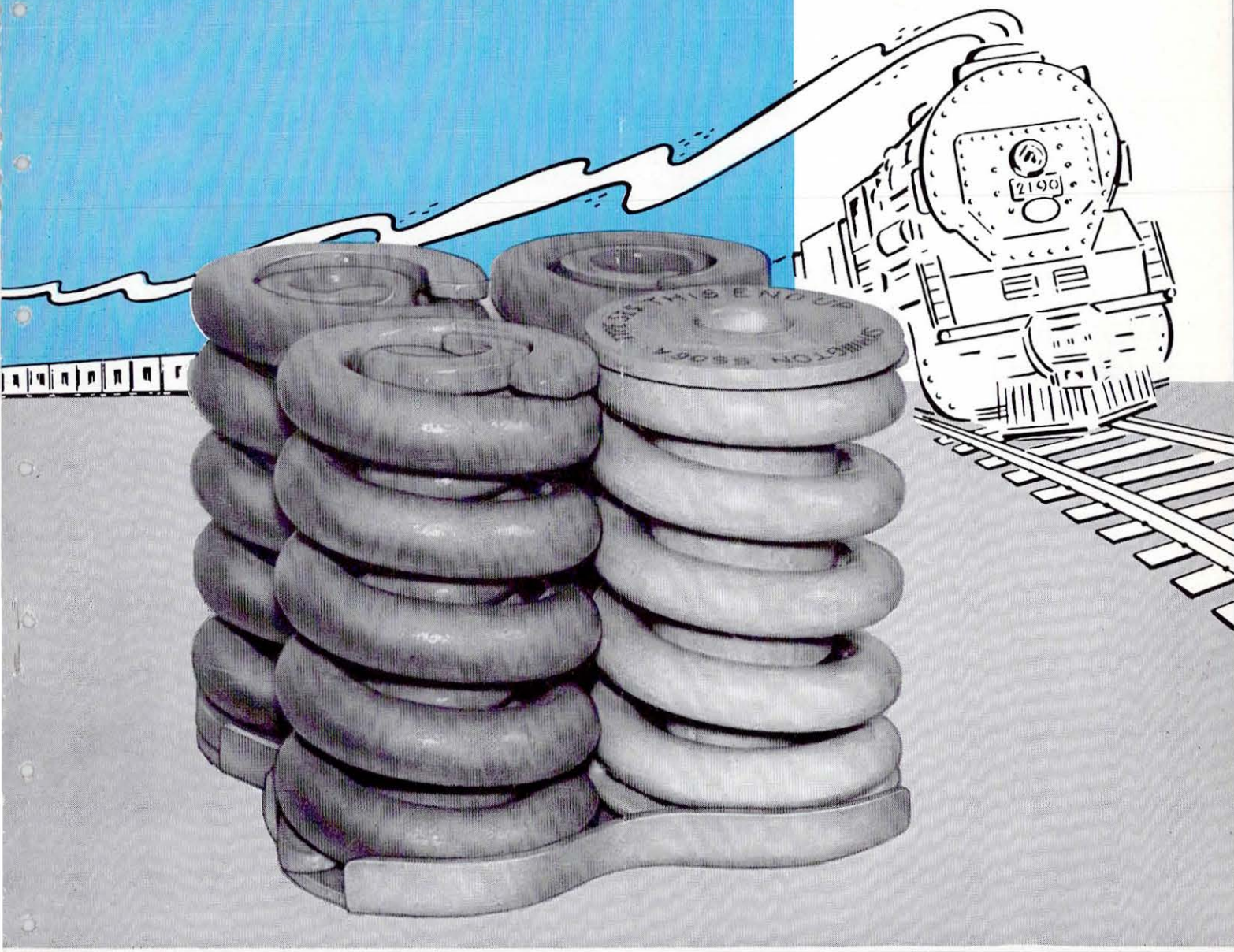

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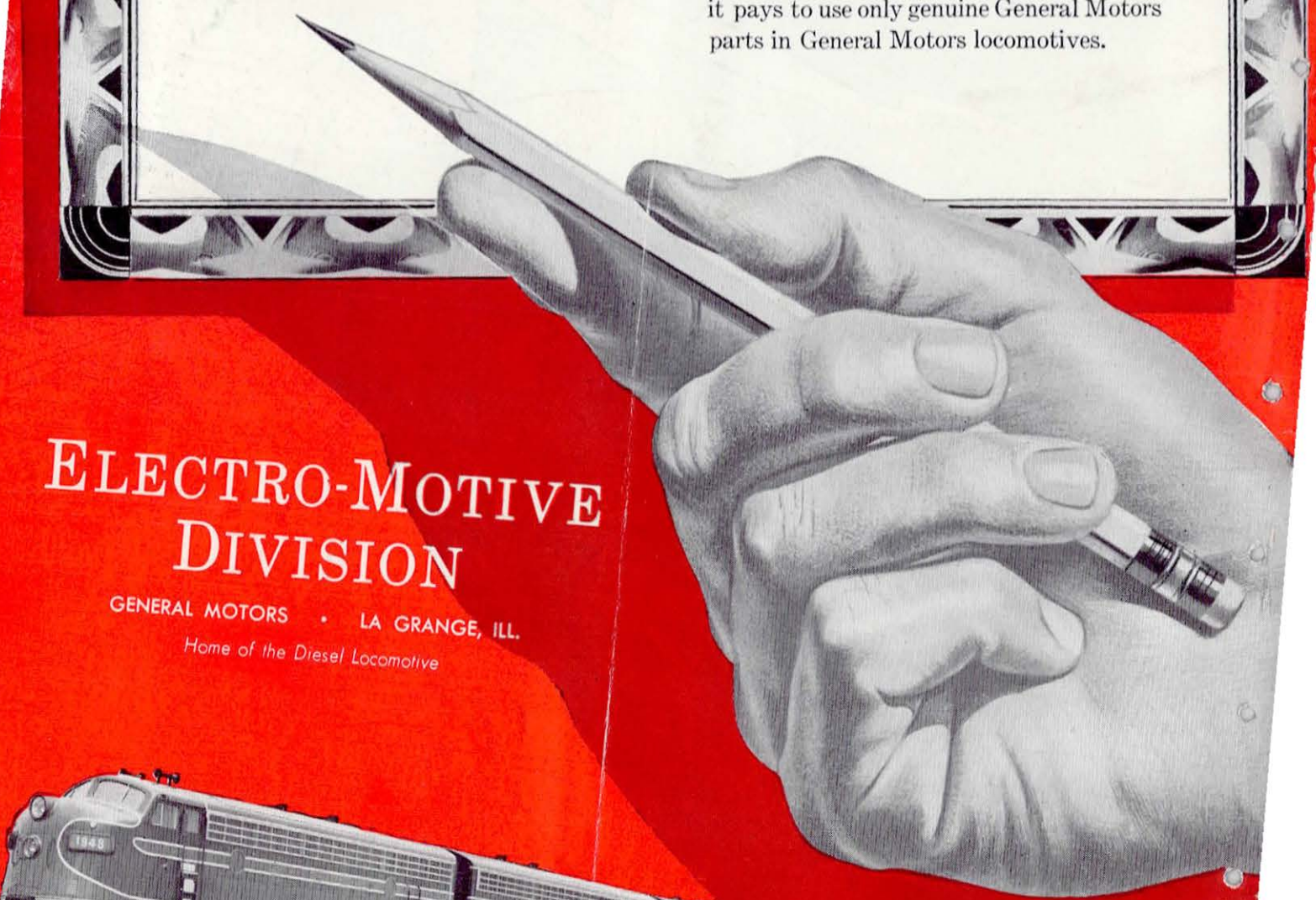

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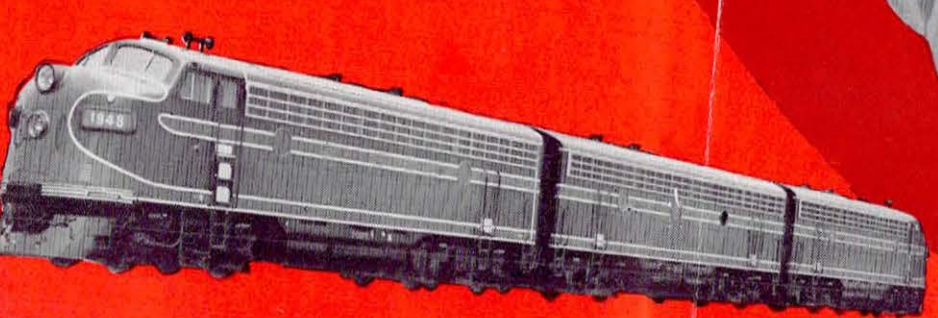

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